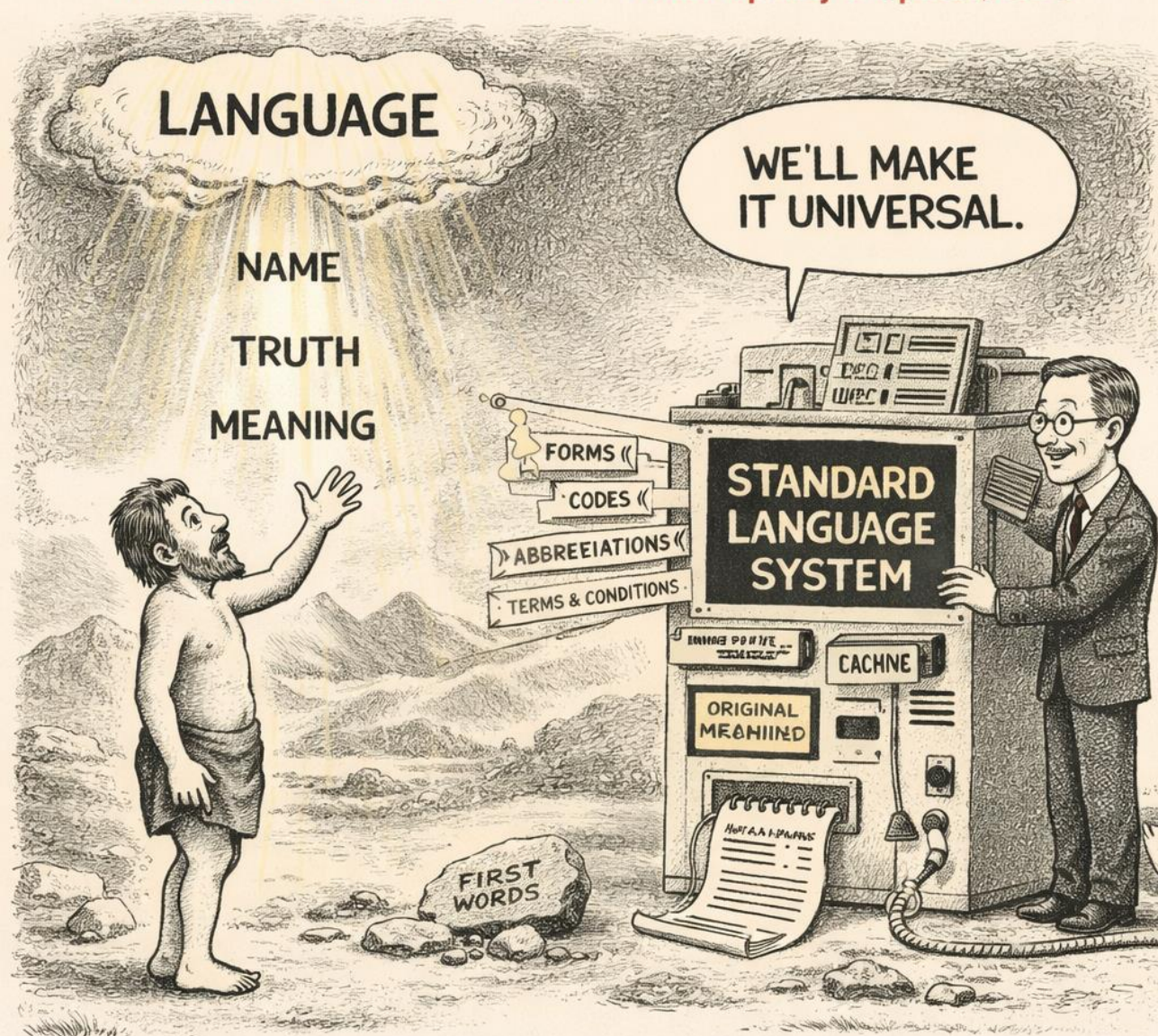


LANGUAGE GENESIS

THE MISCOMMUNICATION TRILOGY "The Conspiracy of Speech, Vol I."



extended version

by Peter Ayolov

SAMIZDAT 2026

THE MISCOMMUNICATION TRILOGY
“The Conspiracy of Speech, Vol. I.”
Part 7
(Extended version*)

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*(*The extended version expands the original text to accommodate a significantly larger body of material that could not be contained within a first four parts, allowing the argument to unfold with greater depth, continuity, and conceptual precision. It is written as a more comprehensive and elaborated version of the original, preserving its core structure while integrating additional analyses, examples, and theoretical developments that extend the scope of the work.)*

Introduction: Language Genesis and Obsolescence of Speech

This book is part of a larger conceptual architecture, the Miscommunication trilogy is devoted to the crisis, transformation, and eventual exhaustion of human communication, and this text presents the extended version of its first volume, a reconstruction and expansion of the original inquiry into what speech is, how it emerged, and why it now appears to be approaching a state of functional obsolescence. What follows is not merely an introduction to language as a system, nor a conventional overview of its evolutionary origins, but an attempt to reposition language within a broader historical and philosophical trajectory: from its genesis as a tool of relevance and survival to its current condition as an overproduced, self-referential, and increasingly detached medium. The central thesis guiding this work is both simple and unsettling: language, like any technological or cultural system, is subject to processes of obsolescence. Not accidental decline, not degeneration in the nostalgic sense lamented by purists, but a structural, systemic, and in many ways planned obsolescence—an exhaustion produced by its own success. Language has not failed because it is weak; it has failed because it has become too powerful, too ubiquitous, too detached from the constraints that once grounded it in reality. In this sense, the story of language is not a linear progression toward clarity, truth, or efficiency, but a cyclical movement in which expansion leads to saturation, and saturation to entropy. To understand this claim, we must begin by reconsidering the origins of language. The traditional narratives—whether mythological, theological, or scientific—tend to portray language as either a divine gift, a sudden mutation, or the inevitable culmination of cognitive evolution. Yet across the diverse theories examined in this volume—from Darwin’s musical protolanguage and Dunbar’s social bonding hypothesis to the improvisational model proposed by Christiansen and Chater—a different picture emerges. Language is not a finished system handed down or hardwired into the brain; it is an emergent, adaptive, and fundamentally unstable process, shaped by the interaction between speakers and listeners, by the pressures of social life, and by the constraints of cognition and memory.

At its earliest stages, communication was tightly bound to relevance. Signals were costly, verifiable, and directly connected to immediate contexts. A gesture, a cry, or a vocalization had meaning because it pointed to something present, something urgent, something that could be confirmed or disconfirmed in real time. As evolutionary models suggest, early communicative systems were constrained by the need to avoid deception: reliability was maintained either through cost, as in Zahavi’s handicap principle, or through immediate verification. In such systems, communication could not afford to drift too far from reality without losing its function. The emergence of human language marks a radical departure from this condition. With the development of protolanguage and, later, full syntax, humans gained the ability to refer to absent events, to imagine hypothetical scenarios, and to construct abstract relations. This expansion dramatically increased the expressive power of communication, but it also introduced a fundamental vulnerability: the possibility of systematic misrepresentation. Words, unlike costly signals, are cheap. They can be produced without effort, repeated without limit, and detached from the conditions that would otherwise guarantee their truth. This is the first moment in the genealogy of linguistic obsolescence. Language becomes efficient precisely by reducing the cost of signaling, but in doing so, it undermines the mechanisms that ensure reliability. The burden shifts from the signal to the system: from the cost of production to the cognitive labor of interpretation. Listeners must now evaluate relevance, detect inconsistencies, and navigate a landscape of potential deception. Communication becomes less about transmitting information and more about negotiating meaning.

From this perspective, language is not merely a neutral medium but a social arena. As multiple chapters in this volume demonstrate, language functions as a tool for coalition-building, status

display, and social navigation. To speak is not simply to inform but to perform—to demonstrate relevance, intelligence, and alignment with a group. Conversation becomes a continuous process of evaluation, a subtle and often unconscious competition for attention and recognition. In this sense, language is inseparable from politics, not in the narrow institutional sense, but in the broader sense of managing relationships, alliances, and hierarchies. It is here that the concept of planned obsolescence begins to take shape in its full complexity. In industrial contexts, planned obsolescence refers to the deliberate design of products with a limited lifespan, ensuring continuous consumption and replacement. When applied to language, the concept does not imply intentional design by a central authority, but a structural dynamic in which linguistic forms are continuously produced, consumed, and discarded. Words lose their force through overuse, meanings drift and fragment, and new expressions are constantly generated to restore novelty and relevance. This process is not external to language; it is intrinsic to its functioning. As grammaticalization studies show, linguistic forms are subject to cycles of compaction and repair. Expressions become shorter, more efficient, and more conventionalized over time, but this very efficiency leads to ambiguity, which in turn requires the introduction of new forms to restore clarity. The system evolves through a constant oscillation between compression and expansion, stability and innovation. What appears as growth is often a form of accelerated decay. At the same time, the cognitive constraints described by the “now-or-never” bottleneck impose limits on how language can be processed. Speech unfolds in time, and its elements must be rapidly chunked, interpreted, and integrated before they disappear. This temporal pressure favors patterns that are predictable, familiar, and easily processed. As a result, language becomes increasingly formulaic, relying on prefabricated constructions and clichés. The space for genuine novelty narrows, even as the volume of speech increases.

The paradox becomes evident: language expands in quantity while contracting in informational density. More is said, but less is communicated. The proliferation of words does not lead to greater understanding but to a saturation of attention. In such an environment, relevance becomes scarce, and the competition for it intensifies. Speakers must constantly produce new signals to stand out, but the more signals are produced, the less effective each becomes. Communication enters a state of diminishing returns. This dynamic is further amplified by the social functions of language. As theories of gossip, persuasion, and sexual selection suggest, much of human speech is oriented not toward the external world but toward the social world. We talk about each other, evaluate each other, and construct narratives that position us within a network of relationships. Language becomes a medium of self-presentation, a way of signaling identity, competence, and belonging. In this context, the pressure to speak is not driven by necessity but by the need to maintain visibility. The result is a continuous inflation of discourse. Just as economic systems can experience inflation when the supply of money exceeds its value, linguistic systems can experience a form of semantic inflation, where the abundance of words diminishes their significance. Terms that once carried weight become diluted, repeated until they lose their impact. New terms are introduced, only to undergo the same process. Meaning becomes a moving target, constantly redefined and rarely stabilized. At a deeper level, this condition reflects a tension between the analog nature of reality and the digital structure of language. As Mary Catherine Bateson argues, language segments and linearizes experiences that are inherently continuous and interconnected. It imposes boundaries where none exist, transforming processes into entities and relationships into discrete categories. This simplification enables analysis and communication, but it also distorts the systems it seeks to represent. The more complex the world becomes, the more inadequate these simplifications appear.

Symbolic systems, as explored in anthropological and evolutionary accounts, depend on collective agreement. Words function because communities accept them as valid representations. Yet this very dependence on consensus introduces fragility. When trust erodes or when the shared framework of meaning becomes unstable, language loses its anchoring function. It continues to operate, but its connection to reality becomes increasingly tenuous. The modern condition of communication can thus be understood as an advanced stage of this process. The mechanisms that once ensured the relevance and reliability of language—costly signaling, immediate verification, shared context—have been replaced by systems that prioritize speed, volume, and visibility. Language circulates faster than it can be evaluated, and its meanings are constantly reshaped by the dynamics of use. The result is not silence but noise: a proliferation of signals that compete for attention without necessarily conveying substance. This introduction sets the stage for the exploration that follows. The chapters assembled in this volume do not converge on a single theory but map a field of tensions and possibilities. They trace the emergence of language from gesture, song, and social interaction; examine its structural properties and cognitive constraints; and analyze its role in shaping human societies. Taken together, they reveal a system that is at once adaptive and unstable, powerful and fragile. The concept of planned obsolescence provides a lens through which these diverse insights can be integrated. It suggests that the trajectory of language is not simply one of progress or decline but of continuous transformation driven by internal contradictions. Language evolves to solve problems, but in doing so, it creates new ones. It expands to increase expressive capacity, but this expansion leads to saturation. It simplifies to improve efficiency, but simplification generates ambiguity. At every stage, the solution becomes the next problem.

To speak of the obsolescence of language is not to predict its disappearance. On the contrary, language persists precisely because it adapts. What becomes obsolete are not the basic capacities for communication but specific forms, structures, and conventions. Yet as these accumulate and accelerate, the system as a whole begins to exhibit symptoms of exhaustion. Communication becomes less about conveying meaning and more about sustaining itself. In this sense, the study of language genesis is inseparable from the study of its limits. To understand how language emerged is to understand the conditions under which it can function effectively, and by extension, the conditions under which it fails. The origin of language is not a closed chapter in the past but an ongoing process that continues to shape and be shaped by human behavior. The task, then, is not to recover a pure or original form of language, nor to lament its current state, but to recognize the dynamics that govern its evolution. By situating language within the broader framework of cultural and biological systems, we can begin to see it not as a transparent medium but as a complex, adaptive, and ultimately finite resource. Its power lies in its ability to create worlds of meaning; its danger lies in its capacity to detach from them. What follows in this volume is an attempt to trace this double movement: the genesis of language as a tool of relevance and its transformation into a system approaching obsolescence. Between these two poles lies the history of human communication, a history that is still unfolding, and whose outcome remains uncertain.

1.1. ORIGINS

The Mouth That Invented the World: Evolution Beyond Sound

The emergence of speech appears not as a simple biological development but as a profound reconfiguration of the human organism, where the body itself becomes a medium for the articulation of thought, transforming communication into a defining feature of human existence. Speech and language, though often conflated, must be distinguished at the outset: language exists

as an abstract system capable of inhabiting multiple forms—spoken, written, signed—while speech is only one of its manifestations, a specific and embodied modality. Yet it is precisely this modality that anchors language in flesh, in breath, in movement, allowing humans not only to transmit information but to externalise inner states, to project emotions and ideas into a shared social space that gradually solidifies into what can be called collective reality. The evolutionary origin of this capacity remains unresolved, suspended between competing theories, suggesting that speech is less an event with a clear beginning than a gradual convergence of anatomical, neurological, and social transformations that resist final explanation.

When one turns to the comparison with non-human communication, the uniqueness of speech becomes more evident. Many animals produce sounds, some with remarkable complexity, yet their communicative systems remain bound to fixed biological mechanisms. Non-human primates, for instance, vocalise without employing the tongue as a flexible articulatory instrument, revealing a fundamental limitation: their sounds are produced, but not sculpted. Human speech, by contrast, emerges from the coordination of lips, tongue, and vocal tract, a choreography of fine motor control that allows the shaping of discrete phonetic units. This difference is not merely technical but conceptual, marking the transition from signal to articulation, from expression to construction. It is here that the human mouth ceases to be a purely biological organ and becomes an instrument of symbolic production. The distinction becomes even sharper when considering the modality independence of human language. Unlike animal communication systems, which are inseparable from the sensory channel through which they are produced, human language detaches itself from any single medium. It can migrate from sound to gesture, from gesture to script, without losing its structural integrity. This capacity reveals a deeper transformation, one that Marc Hauser, Noam Chomsky, and W. Tecumseh Fitch interpret as a reorganisation of neural architecture, allowing language to exist independently of the physical channel that carries it. A human deprived of hearing does not lose language; it reappears in the hands, in space, in movement. The message survives the loss of its original medium, demonstrating that language, in its essence, is not sound but structure. In contrast, the whale that cannot vocalise cannot simply transfer its song into another modality; its communication collapses with the loss of its channel. Humans alone possess this capacity to separate meaning from medium, to encode and re-encode the same content across different forms, suggesting that language is less a function of the body than a system that can inhabit multiple bodies.

Yet this abstraction does not negate the importance of the physical evolution of speech organs, which provided the initial conditions for this transformation. The human vocal tract represents a reconfiguration of organs originally designed for survival—feeding, breathing—into instruments of articulation. Lips that once served primarily for ingestion and expression become tools for phonetic precision; the tongue, once confined to manipulation of food, evolves into a highly flexible structure capable of producing a vast range of sounds. The respiratory system, too, undergoes a crucial modification: the ability to control breath, to prolong exhalation and regulate airflow, transforms breathing into a rhythmic foundation for speech. This is not a minor adjustment but a fundamental shift, as breathing becomes subordinated to communication, revealing that speech is not simply added onto biological processes but reorganises them. The descent of the larynx further exemplifies this transformation. By lowering the larynx, humans extend the vocal tract, increasing the range and clarity of sounds, particularly vowels. This adaptation, however, introduces a paradox: it increases the risk of choking, suggesting that the evolutionary benefits of speech outweighed the dangers it introduced. Such trade-offs indicate that speech is not a neutral development but a costly innovation, one that reshapes the body in exchange for communicative power. The tongue, perhaps the most decisive element, becomes the central articulator, its unique

shape and muscular complexity enabling the production of distinct vowel sounds such as [i], [u], and [a]. These sounds, found across languages, are not arbitrary but rooted in the physical possibilities of the human vocal apparatus, demonstrating that even the most abstract linguistic structures remain grounded in bodily constraints.

Theories attempting to explain the emergence of these capacities often point to indirect pathways. The hypothesis of semi-aquatic adaptation, for example, suggests that early human interaction with aquatic environments may have enhanced breath control, a prerequisite for sustained vocalisation. Similarly, the size exaggeration hypothesis proposes that the lowered larynx initially evolved to enhance vocal displays of dominance, later becoming repurposed for speech. In both cases, speech emerges not as a direct goal but as a secondary effect, a reappropriation of existing adaptations. This reinforces the idea that language is an opportunistic system, assembling itself from available biological resources rather than arising from a single evolutionary intention. The question of Neanderthal speech further complicates the narrative. The presence of a modern-like hyoid bone and the FOXP2 gene suggests that Neanderthals possessed the anatomical and genetic prerequisites for speech, and their complex social behaviours imply the need for sophisticated communication. Yet uncertainty remains regarding the full range of their vocal capabilities, particularly in relation to vowel production. This ambiguity highlights a broader issue: speech leaves few direct traces in the archaeological record, forcing researchers to reconstruct its history from indirect evidence. What emerges is not a clear boundary between speech and its absence but a continuum, where different hominin species may have possessed varying degrees of vocal and linguistic capacity.

The evolution of speech thus appears as a layered process, where biological changes, neural developments, and social pressures converge to produce a system that is both embodied and abstract. It is a system that begins in the mouth but exceeds it, transforming organs into instruments and sounds into structures, allowing humans not only to communicate but to construct realities that extend beyond immediate perception. In this sense, speech is not merely a tool but a condition of human existence, a mechanism through which the world is continuously rearticulated and reimagined, revealing that the true significance of speech lies not in its origin but in its ongoing capacity to reshape both the speaker and the world that is spoken into being.

The Architecture of the Unsayable: How Language Assembled Itself

The emergence of language appears not as a single invention but as a layered construction, unfolding across biological evolution, cognitive transformation, and social reorganisation, where each proposed theory captures only a fragment of a system that ultimately exceeds all attempts at reduction. The study of language origins has long oscillated between fascination and prohibition, as early scholars were confronted with the absence of direct evidence, forcing them into speculative narratives that lacked empirical grounding. The decision of the Linguistic Society of Paris in 1866 to ban discussion on the topic was not merely institutional conservatism but an acknowledgment of the epistemological limits of the field. Even after Charles Darwin opened the evolutionary horizon, the origin of language remained suspended between conjecture and science, only re-emerging as a legitimate domain of inquiry in the late twentieth century, when interdisciplinary methods allowed researchers to triangulate evidence from fossils, genetics, archaeology, and comparative linguistics. Yet the return of the question did not resolve its central paradox: language is both the object of investigation and the medium through which that investigation is conducted, making its origins inherently reflexive and resistant to closure.

Theoretical approaches reflect this tension, dividing into continuity and discontinuity models that mirror deeper philosophical commitments.

Continuity theories interpret language as an extension of pre-existing communicative systems, suggesting that complexity emerged gradually from simpler forms, while discontinuity theories insist on a qualitative break, positioning language as an unprecedented innovation without direct precursors. This opposition is further complicated by the debate between innate and socially learned systems, where biological determinism confronts cultural construction. Noam Chomsky's proposal of a universal grammar arising from a single evolutionary leap exemplifies the search for a minimal biological explanation, reducing language to a computational operation, often described as 'Merge', capable of generating infinite structures. In contrast, Michael Tomasello and other social theorists emphasise the gradual accumulation of communicative practices rooted in interaction, gesture, and shared intentionality. Between these positions emerges a third perspective, one that shifts the focus from the origin of language as a biological or cognitive event to the conditions that make language possible. Ritual and social coevolution theories argue that language requires a framework of trust and collective validation, suggesting that symbolic communication cannot stabilise without a social structure capable of sustaining it. In this view, language is not merely produced by individuals but maintained by communities, and its emergence coincides with the formation of social mechanisms that guarantee its reliability. The problem of trust becomes central when examined through signaling theory, which exposes a fundamental contradiction: symbolic communication is inherently unreliable because it is detachable from immediate reality. Unlike animal signals, which are constrained by biological conditions and therefore difficult to fake, human language allows for displaced reference, enabling speakers to discuss absent or imaginary entities.

This capacity introduces the possibility of deception, making language evolutionarily unstable unless mechanisms of trust are established. Hypotheses addressing this problem reveal different strategies for stabilising communication. The 'mother tongues' hypothesis situates the origin of language within kin-based groups, where genetic relatedness fosters cooperation and reduces the risk of deception, while the 'obligatory reciprocal altruism' model extends trust to broader social networks through enforced reciprocity. Both approaches attempt to resolve the same paradox: language requires honesty to function, yet it simultaneously enables falsehood. The persistence of this tension suggests that language evolves not by eliminating deception but by managing it within acceptable limits. The social dimension of language is further explored in the gossip and grooming hypothesis, where communication is understood as a mechanism for maintaining social bonds. Robin Dunbar's proposal that language replaces manual grooming as a means of social cohesion highlights the shift from physical to symbolic interaction, allowing individuals to sustain larger social networks. Yet this efficiency undermines the very costliness that makes signals credible, raising questions about how language maintains its value when it becomes cheap and easily produced. Ritual/speech coevolution theory responds by embedding language within symbolic culture, where rituals, norms, and shared beliefs provide the necessary framework for trust. In such contexts, words function as what John Searle terms 'institutional facts', gaining validity not from direct correspondence with reality but from collective agreement. Language thus becomes a system sustained by social endorsement, where meaning is guaranteed by participation rather than verification. Biological and cognitive evidence adds another layer to this complex picture. The co-evolution of tool-making and language suggests that both rely on shared neural mechanisms related to planning and sequencing, indicating that language may have emerged from broader cognitive capacities rather than from a specialised module alone.

The discovery that activities such as Acheulean tool production and linguistic tasks activate overlapping brain regions reinforces the idea that language is embedded in general intelligence rather than isolated within it. Similarly, theories such as the Romulus and Remus hypothesis attempt to explain the emergence of recursion, a defining feature of human language, by linking it to developmental changes in the brain, particularly the delayed maturation of the prefrontal cortex. This delay allows for the acquisition of complex cognitive abilities, including the capacity to generate nested structures, which in turn enable the infinite productivity of language. Gestural theories shift attention from vocalisation to movement, proposing that language originated in manual gestures before transitioning to speech. The persistence of gestures in modern communication, alongside the structural equivalence of sign languages and spoken languages, supports the idea that language is not inherently vocal but multimodal. The eventual dominance of speech is then explained through practical advantages, such as the ability to communicate without visual contact and to free the hands for tool use. Yet the transition from gesture to speech remains only partially understood, suggesting that both modalities may have co-evolved rather than replacing one another. Additional hypotheses, such as the tool-use sound theory and the role of mirror neurons, emphasise the importance of imitation and sensory integration in the development of communication. The ability to reproduce and interpret sounds associated with actions may have provided the foundation for symbolic representation, while mirror neuron systems enable the internal simulation of observed behaviour, facilitating shared understanding. These mechanisms blur the boundary between perception and production, suggesting that language arises from the interplay between observing and doing, hearing and speaking. Theories focusing on early human social life, such as the ‘putting-down-the-baby’ hypothesis, highlight the importance of emotional communication in the mother-infant relationship, where vocalisations serve to maintain contact and reassurance.

This perspective emphasises that language is not only a cognitive system but also an affective one, rooted in the need for connection and care. Similarly, the ‘from-where-to-what’ theory traces language evolution through stages of auditory processing, linking the development of phonological systems to neural adaptations in sound perception and memory. These approaches collectively suggest that language emerges from multiple interacting processes rather than a single causal chain. Grammaticalization theory introduces a temporal dimension, showing how language evolves through continuous transformation, where concrete expressions gradually acquire abstract meanings. This process demonstrates that language is not static but self-modifying, driven by the pragmatic needs of speakers who prioritise understanding over formal correctness. The evolution of grammar thus reflects the creative reinterpretation of existing elements, revealing that linguistic complexity arises from use rather than design. However, this perspective also highlights its own limitation: it explains how language changes but not how it first emerged, indicating that the origin of language remains partially beyond the reach of current theoretical frameworks. Broader models, such as the evolution-progression model and the self-domesticated ape theory, situate language within the larger trajectory of human development. Technological innovation, social cooperation, and neural plasticity converge to create conditions in which language can arise, suggesting that it is inseparable from the overall transformation of the human species.

The comparison with domesticated animals, where relaxed selection pressures lead to increased behavioural flexibility, offers a compelling analogy for human evolution, where cultural processes reshape biological constraints. What emerges from this multiplicity of perspectives is not a unified theory but a network of partial explanations, each illuminating a different aspect of language. Language appears as an emergent system, produced by the convergence of trust, cognition, social structure, and biological adaptation, yet reducible to none of them individually. Its origin remains

elusive not because it is unknowable, but because it is distributed across processes that cannot be fully synchronised into a single narrative. Language does not begin at a point; it accumulates, stabilises, and transforms, becoming both the product and the condition of human existence, a system that not only describes the world but continuously reconfigures it through the act of being spoken.

The Brain That Learned to Speak

Angela D. Friederici in *Language in Our Brain: The Origins of a Uniquely Human Capacity* examines language as the product of a long evolutionary and neural transformation, showing that the human ability to speak cannot be reduced either to mere sound production or to a general intelligence shared with other animals, but must be understood as a specifically organised capacity rooted in the structure of the brain itself. The question of how language began is ancient, reaching back to Plato's reflections on whether words are arbitrary signs or whether they possess some deeper relation to the things they denote. This problem still shapes modern thought, because if words are not naturally tied to their referents, then the emergence of language must be explained not as a passive reflection of the world but as a creative act of symbolic ordering. In this sense, language appears not simply as a tool for naming what already exists, but as a system through which humans organise perception, relation, and thought. Darwin relocated this old philosophical problem into the field of biology by comparing human and non-human capacities, arguing that although language must be learned, the inclination to acquire it belongs to human nature itself. This distinction is crucial. Language is not inherited as a ready-made vocabulary, but as a disposition, an internal readiness that allows a child to enter into a linguistic world with astonishing speed. Even in Darwin's own reflections one can see the tension between sound, emotion, and cognition, since he noted the importance of prosody while resisting the idea that gesture was the true origin of language.

The possibility that music, rhythm, and vocal modulation preceded syntax already hints at a view in which language emerges not from a single source but from the gradual convergence of several human capacities. Earlier thinkers such as Herder imagined language as a human invention grounded in expressive imitation, where early words may have arisen from sounds associated with the world itself. Yet modern linguistics, especially in its Chomskyan form, gives grammar a much more central role. Instead of treating syntax as a late refinement added to a stock of words, it places combinatory structure at the centre of language, suggesting that the essence of speech lies not in isolated names but in the power to generate relations. This shift changes the entire frame of the debate. Language is no longer primarily a lexicon but a system of organisation, a capacity to combine finite elements into potentially infinite structures. From this perspective, the question of language origins becomes inseparable from the question of what in the human brain makes such structuring possible. Competing theories illuminate different dimensions of this problem. Some place emphasis on lexical protolanguages, imagining an early stage in which words preceded grammar. Others, especially gesture-based theories, propose that language evolved from manual movements and bodily signalling. The appeal of such theories lies in the discovery of mirror neurons and in the apparent continuity between action understanding and communication. If the same neural systems that organise movement also support the recognition of another's action, then gesture might seem a plausible precursor to speech. Yet this line of thought remains incomplete. Gestures, however expressive, do not by themselves explain the arbitrariness of words, their displacement from immediate context, or the hierarchical ordering that characterises syntax. A gesture can indicate, demand, or imitate, but language does something more radical: it creates

structures of dependency and embedding, allowing one thought to be placed within another, a possibility that opens the space of narrative, abstraction, and reflection. Neuroscience strengthens this distinction.

Although Broca's area is involved in both gesture and language, the networks in which it participates are not identical. For speech and syntax, Broca's area works together with the posterior superior temporal gyrus, forming a circuit that supports specifically linguistic operations. This suggests that language did not simply arise by extending gesture, but through a reorganisation in which older capacities were absorbed into a new and more demanding architecture. Comparative studies with songbirds and primates further sharpen the uniqueness of the human case. Songbirds provide an intriguing model because they learn vocal patterns through sensory-motor processes, and in this respect they resemble humans more than primates do. Their songs display ordering principles that can be described as a kind of phonological syntax. Yet they do not reach the level of hierarchical structure found in human language. Primates, by contrast, can learn simple rules and sequence patterns, but they struggle with the deeper dependencies that syntax requires. These comparisons reveal that pieces of the linguistic puzzle are scattered across the animal world: auditory learning appears in one species, limited sequential cognition in another, vocal signalling in another still. But only in humans do these fragments converge into a system capable of recursive, hierarchical expression. This means that language cannot be explained by a single precursor. It is not merely advanced vocalisation, nor only improved memory, nor simply refined social signalling. It is the result of a reconfiguration in which several partial capacities were bound together into a new totality.

At the centre of this reconfiguration stands the human brain. Human language depends not only on isolated brain regions but on specific patterns of connectivity. The inferior frontal gyrus, especially Broca's area, and the superior temporal cortex are linked by white matter pathways whose organisation distinguishes humans from other primates. The dorsal tract, particularly important for syntax, appears underdeveloped in non-human primates but becomes robust in human development, maturing through childhood as linguistic ability deepens. This is one of the decisive insights of Friederici's approach: language is not simply housed in the brain as content is housed in a container. It emerges from the coordinated activity of distributed but precisely connected regions. Syntax, in this framework, is not an abstract mental gift floating above biology. It is supported by a neural architecture that allows structured combination. The Chomskyan notion of 'Merge' becomes significant here because it names the elementary computational act through which linguistic structures can be built. One element is combined with another, and from that combination further combinations become possible. This simple operation, if neurally realised, would explain how language achieves digital infinity from finite means. Semantics, by contrast, proves far harder to localise, because meaning is bound to individual histories, associations, and contexts. This very difficulty is revealing. It suggests that while syntax may depend on relatively stable neural computation, meaning is more widely distributed, open-ended, and variable. The brain gives language its structure, but lived experience fills that structure with content. The uniqueness of human language thus lies partly in the coupling of a highly specific combinatorial mechanism with a broad and flexible field of meaning. Genetic evidence adds another layer without providing a final answer. Humans and other primates differ only slightly in DNA, yet that small divergence has immense consequences.

The FOXP2 gene became famous because of its association with speech and language, but its role is not singular or magical. It exists in other animals and regulates numerous other genes, which makes it less a language gene than a marker within a much wider developmental network. This is

important because it resists simplistic explanations. Language did not emerge from one miraculous mutation in isolation, but from an interaction of genes affecting neural growth, connectivity, and timing. The likely time frame, somewhere between 300,000 and 400,000 years ago, places the foundations of language deep in human prehistory, possibly before the rise of Neanderthals. What matters philosophically is that language appears neither as timeless essence nor as pure cultural accident. It is historically emergent, biologically grounded, and yet open enough to generate endless cultural worlds. The special status of Broca's area illustrates this intersection of matter and abstraction. In humans, this region is cytoarchitectonically distinct, with a greater density of pyramidal neurons and a leftward asymmetry absent in chimpanzees. Its microscopic organisation is not merely anatomical detail. It indicates that the human brain evolved a tissue capable of handling the computational burden of syntax. Likewise, the arcuate fasciculus, connecting frontal and temporal regions, gives this local specialisation its larger functional reach. It is not enough to possess a specialised region; what matters is how that region communicates with others. The maturation of this pathway in childhood mirrors the growth of syntactic ability, showing that the evolution of language is echoed in individual development.

The child's brain, in this sense, recapitulates not the whole of human history, but the principle that language depends on the strengthening of structured neural relations. Evolutionary and developmental perspectives therefore converge. Infants and non-human primates may share certain auditory sensitivities and basic cognitive capacities, yet only the adult human brain fully integrates them into a language network capable of recursion and abstraction. From this emerges the figure of *Homo loquens*, not simply the human who makes sounds, but the human who can organise relations, narrate absence, formulate conditions, imagine futures, and preserve the past in words. Syntax is decisive because it allows language to move beyond naming into the realm of logic, story, memory, and law. Through syntax, humans do not merely speak; they bind events together, assign causes, establish hierarchies, and produce worlds of shared intelligibility. The development of Broca's area and its pathways to the temporal cortex thus marks more than a neurological novelty. It signals a transformation in the kind of being the human became. Whether language first arose from practical necessity, social complexity, or some internal drive toward symbolic order remains unresolved. But its consequences are unmistakable. Language made possible not only communication, but a distinct form of existence in which thought can be externalised, preserved, contested, and inherited. The brain that learned to speak did more than add one skill to the animal repertoire. It created the conditions for culture, memory, and the self-conscious shaping of reality. In that sense, language is not simply something humans use. It is one of the principal ways in which humans became what they are.

Friederici, A.D. (2017) Language in Our Brain: The Origins of a Uniquely Human Capacity. Cambridge, MA: MIT Press.

The Covenant of Words: Language as Social Contract

Daniel Dor, Chris Knight, and Jerome Lewis in *The Social Origins of Language* reposition the question of linguistic emergence by shifting attention from the isolated brain to the collective, arguing that language did not arise as an internal mechanism seeking expression but as a social institution requiring shared trust, cooperation, and mutual accountability. This reorientation begins with a methodological rupture: instead of asking how language could emerge from individual cognition alone, one must ask what kind of social world would make language possible at all. The difficulty of the problem lies not only in the absence of direct evidence, which forces scholars into inferential reconstruction, but also in the fact that language itself mediates every attempt to

describe its own origin, creating a reflexive loop where explanation is inseparable from the very phenomenon being explained. Within this framework, the origin of language appears less as a singular evolutionary event and more as a transformation in the structure of human relations, where communication becomes a shared enterprise rather than a private capacity. Earlier models, particularly those influenced by Noam Chomsky, placed language within the individual as an innate faculty, often conceptualised as an internal system designed primarily for thought. This perspective privileged genetic explanations, searching for the minimal biological change that could account for the emergence of syntax and recursive structure.

Yet such an approach encounters a fundamental limitation: it presupposes the existence of language-like cognition without adequately explaining how such cognition could stabilise within a community. The social perspective advanced in this work reverses the order of explanation. Instead of deriving communication from cognition, it derives cognition from communication, suggesting that the pressures of social life—cooperation, coordination, shared intention—shaped the development of linguistic capacities. In this view, language is not the externalisation of pre-existing thoughts but the medium through which those thoughts become possible. The shift from a gene-centred model to a biocultural one further reinforces this argument. Evolution is no longer understood as a sequence of genetic mutations that later find behavioural expression, but as a dynamic interaction in which behavioural innovations create new selection pressures, eventually leading to genetic accommodation. This implies that early forms of communication may have existed prior to the full biological specialisation for language, functioning within a social context that gradually refined and stabilised them. The emergence of language thus becomes inseparable from the emergence of new forms of social organisation. Human societies diverged from primate hierarchies not simply by increasing intelligence, but by reorganising power relations. Where primate groups rely on dominance and physical force, human communities increasingly depended on cooperation, shared norms, and the regulation of behaviour through collective agreement. This transformation introduced a crucial condition for language: trust.

Without trust, symbolic communication collapses, as words, unlike signals tied directly to biological states, can be manipulated, fabricated, or detached from immediate reality. The social world that gives rise to language must therefore include mechanisms that ensure a baseline of reliability, even in the presence of potential deception. The development of such mechanisms is traced through practices that precede language in its fully developed form. Shared childcare creates bonds that extend beyond immediate kinship, distributing responsibility and fostering interdependence. The control of fire produces spaces of gathering, where communication can occur beyond immediate practical necessity. Ritual practices establish shared meanings and reinforce group cohesion, creating a symbolic framework within which communication gains stability. These pre-linguistic innovations do not merely accompany language; they constitute the environment in which it becomes viable. Communication in such contexts is not simply the exchange of information but the enactment of social relations, where meaning is sustained by participation in a shared world. Theoretical contributions within this perspective elaborate on these dynamics in different ways. The idea of language as a biocultural niche emphasises that linguistic capacity emerges from interaction, not isolation. Individuals do not invent language independently; they enter into a system that is collectively maintained, where meaning arises from intersubjective engagement. Similarly, models of culturally driven co-evolution suggest that collective exploration shapes individual cognition, reversing the assumption that cognition precedes culture. The emphasis shifts from the solitary mind to the network of relations within which that mind operates. Signal evolution theory deepens this argument by addressing the problem of reliability.

Words, as Cedric Boeckx notes, function as ‘patently false signals’ in the sense that their connection to meaning is arbitrary and not grounded in immediate physical reality. Their reliability depends not on intrinsic properties but on social endorsement. John Searle’s concept of institutional facts becomes relevant here, as it captures the idea that certain truths exist only because they are collectively recognised. Language belongs to this category. Its validity is not guaranteed by nature but by agreement. This insight reveals that the emergence of language requires a transition from systems of costly signals, which are difficult to fake and therefore reliable, to systems of cheap signals, which are flexible but potentially deceptive. Such a transition is only possible within a social framework that can absorb and regulate the risks of deception. The later chapters extend this perspective into the domain of cultural evolution, showing how language diversifies and stabilises over time. The co-evolution of imagination, memory, and communication suggests that language is not merely a tool for describing the world but a system for constructing it. Cultural epidemiology demonstrates how linguistic forms spread through populations, shaped by cognitive biases and social dynamics, while computational models illustrate how grammatical structures can emerge from repeated interactions driven by communicative needs. These approaches converge on a common conclusion: language evolves not through isolated innovation but through collective processes in which individuals adapt to one another. Grammar itself, often treated as an abstract system, becomes a product of interaction, shaped by the necessity of being understood within a community.

What emerges from this social perspective is a redefinition of language as a form of collective action. It is not simply a means of transmitting information but a mechanism for coordinating behaviour, establishing norms, and sustaining shared realities. Its origin cannot be located in a single mutation, a single cognitive leap, or a single moment in evolutionary history. Instead, it must be understood as the outcome of a long process in which biological, cognitive, and social factors intertwine. The human capacity for language is thus inseparable from the human capacity for cooperation. To speak is not only to produce sound or structure but to participate in a system of mutual recognition, where meaning depends on the willingness of others to accept and respond. In this sense, language is less an invention than a covenant, a fragile agreement sustained by trust and continually renegotiated in every act of communication. Its emergence marks the point at which humans became not only thinking beings but beings capable of sharing thought, transforming isolated experience into collective understanding, and in doing so, creating the conditions for culture, society, and history itself.

Dor, D., Knight, C. and Lewis, J. (eds.) (2014) The Social Origins of Language. Oxford: Oxford University Press.

The Command to Imagine: Language as Shared Construction

Daniel Dor in ‘The Instruction of Imagination: Language as a Communication Technology’ reconceives language not as a passive system of representation but as an active, socially constructed technology whose primary function is to instruct others in the reconstruction of experience, transforming communication into a cooperative act of imagination. From this perspective, language emerges within the dense fabric of pre-linguistic societies as a collective invention, comparable not to instinctive behaviour but to tools such as writing or digital networks, systems that extend human capacities by reorganising interaction itself. This shift from cognition to construction redefines the nature of language: it is not something that simply resides in the brain, waiting to be expressed, but something built between individuals, maintained through shared conventions, and continuously refined through use. The analogy with communication technologies

is not metaphorical but structural. Just as ‘The Book’ or ‘The Internet’ represents a general form instantiated in countless particular versions, language exists as a universal type realised in specific linguistic systems. Human cognitive abilities, in this view, are not the origin of language but responses to its demands, adaptations that enable individuals to navigate and operate within a pre-existing communicative infrastructure. Such a conception reverses the conventional order of explanation, placing language outside the individual as a social artefact that shapes cognition rather than being shaped by it.

The central problem that this technological system addresses is the gap between individual experiences. Human experience is irreducibly private, formed by perception, memory, and personal history, and therefore inaccessible in its entirety to others. Communication must therefore overcome this separation, yet most systems do so by attempting to minimise the gap through direct or indirect presentation. Gestures, facial expressions, images, and sounds rely on shared perceptual frameworks, offering the receiver an experience that approximates that of the sender. These forms of communication remain tied to what can be seen, heard, or otherwise directly evoked. Language departs from this logic in a decisive way. It does not attempt to reproduce experience but to instruct its reconstruction. Instead of presenting a scene, it provides a skeletal set of cues that guide the listener’s imagination, enabling the generation of an experience that has never been directly perceived. This instructive function is what allows language to achieve displacement, not merely by referring to absent objects, but by enabling the creation of entirely new scenarios, hypothetical situations, and abstract relations. Displacement, often cited as a defining feature of language, is therefore insufficient on its own. What distinguishes language is the method by which displacement is achieved: not through representation, but through instruction. The listener is not shown what to perceive but told how to imagine. This distinction marks a fundamental transformation in the nature of communication, extending it beyond the limits of shared perception into the domain of shared construction. The concept of instructive communication reveals why language is uniquely capable of conveying inner states, causal relations, and future plans. These forms of content cannot be directly experienced by others; they must be reconstructed through imagination.

Language provides the minimal structure necessary for this reconstruction, relying on the listener’s ability to fill in gaps, interpret relations, and generate coherence from partial information. Communication thus becomes a collaborative process, in which meaning is not transmitted but co-produced. The success of this process depends on two interrelated components. The first is the symbolic landscape, a shared network of meanings, categories, and associations that provides the raw material for interpretation. This landscape is not fixed but evolves through cultural practices, reflecting the collective history of a community. The second is the communication protocol, a set of norms governing how elements of the symbolic landscape are combined and used. Together, these components enable speakers to encode their experiences into linguistic forms and listeners to decode them through imaginative reconstruction. Language therefore operates at the intersection of the private and the social, translating individual experience into collectively intelligible form without ever eliminating the gap that necessitates it. The emergence of this instructive strategy can be understood as a response to the limitations of earlier communication systems. In pre-linguistic societies, where gestural and mimetic communication had reached their functional limits, new challenges arose that required the sharing of information beyond immediate perception. Coordinating activities across space, transmitting knowledge about unseen resources, and managing increasingly complex social relations all demanded a form of communication capable of bridging experiential gaps. The development of instructive communication was not an abrupt innovation but the result of gradual experimentation within cooperative and trusting communities.

Trust plays a crucial role here, as the effectiveness of instruction depends on the willingness of participants to accept and act upon information that cannot be directly verified. This reinforces the idea that language is inseparable from the social conditions that sustain it. Without stable relationships and shared norms, the instructive function would collapse, as listeners would have no reason to trust the instructions they receive.

Over time, these experimental practices stabilised into a more autonomous system. The symbolic landscape expanded as communities developed finer distinctions and more elaborate categories, allowing for greater precision in communication. Phonetic and semantic structures emerged to standardise expression, reducing ambiguity and facilitating learning. The combination of signs into linear sequences introduced new possibilities for structuring meaning, enabling the development of hierarchical relations and increasing expressive capacity exponentially. Each of these innovations represents a refinement of the technology, gradually separating language from other forms of communication and establishing it as a distinct system. Yet this process of differentiation does not imply isolation. Language continues to interact with gesture, perception, and other communicative modes, even as it develops its own internal organisation. Its autonomy is therefore relative, defined by its functional specificity rather than by complete independence. What distinguishes language is not that it replaces other systems, but that it reorganises them within a new framework centred on instruction and imagination.

The technological character of language becomes fully apparent when one considers its cumulative nature. Like other technologies, language evolves through incremental improvements punctuated by moments of rapid change. Each innovation builds upon previous ones, creating a system that is both historically contingent and functionally coherent. The result is a communicative apparatus capable of unprecedented flexibility, allowing humans to share not only information but possibilities, not only perceptions but constructions. Language thus transforms the very nature of human interaction, enabling individuals to coordinate actions, share knowledge, and create collective realities that extend beyond immediate experience. Its emergence marks a shift from communication as the exchange of signals to communication as the co-creation of worlds. In this sense, language is not merely a medium but a condition of human existence, a technology that reshapes cognition, social organisation, and culture by making imagination itself communicable.

Dor, D. (2014) 'The Instruction of Imagination: Language as a Communication Technology', in Dor, D., Knight, C. and Lewis, J. (eds.) The Social Origins of Language. Oxford: Oxford University Press.

The Fiction That Binds: Language and the Making of Social Reality

Emily Wyman in 'Language and Collective Fiction: From Children's Pretence to Social Institutions' reconceptualises language as a mechanism not merely for describing the world but for constructing shared realities, demonstrating that human communication operates through the coordination of collective fictions that acquire normative force within social life. Traditional linguistic theories, following Saussure, treated language as a system for encoding thought into structured utterances, yet this view proves insufficient once one considers the insights of pragmatics. What is explicitly said is often minimal compared to what is understood, as meaning emerges not from the words themselves but from the inferential work of listeners operating within shared contexts. An utterance such as 'looks like it might rain' carries implications that extend far beyond its literal content, revealing that language functions less as a container of information and

more as a trigger for social interpretation. This shift aligns with the philosophical tradition of speech act theory, where language is understood as action.

Austin and Searle showed that speaking is not only a matter of stating facts but of doing things—requesting, promising, commanding. Yet the most radical dimension of this insight lies in performative speech acts, which do not merely describe or influence reality but bring new realities into being. When a declaration such as ‘I pronounce you husband and wife’ is uttered within the appropriate context, it does not report a fact but creates one. These newly created entities, which Searle terms institutional facts, depend entirely on collective recognition. Their existence is not grounded in physical reality but in shared agreement, and their power lies in the obligations and rights they generate. The formula ‘X counts as Y in context C’ captures the logic of this transformation, where a material or symbolic object acquires a new status through collective endorsement. Without this endorsement, the words remain inert; with it, they become constitutive of social reality. The question that follows is how such a capacity arises. Wyman locates its developmental origins in children’s pretend play, suggesting that the ability to participate in institutional reality is rooted in early forms of imaginative interaction. In pretend scenarios, children assign roles and statuses through proto-performative acts: a block becomes an apple, a child becomes a dragon. These assignments are not arbitrary in practice but governed by implicit rules that participants recognise and enforce.

The block, once designated as an apple, must be treated as such within the context of the game. Violations of this shared fiction are corrected, revealing that even in play, children operate with a sense of normative constraint. Pretend play thus functions as a developmental laboratory in which the basic structures of institutional reality are rehearsed. It introduces children to the idea that certain facts are neither purely natural nor purely subjective but exist in an intersubjective domain sustained by agreement. Through this process, children learn that validity can be context-dependent and collectively maintained. The transition from early pretend play to full participation in institutional life is neither uniform nor universal, as cross-cultural differences reveal. In some societies, children engage extensively in imaginative fantasy from an early age, while in others, pretend play emerges later and is closely tied to the imitation of adult practices. These variations suggest a two-stage developmental trajectory. Initially, children acquire a general capacity for joint intentionality and the understanding that shared agreements can structure behaviour. Later, this capacity becomes embedded in culturally specific scripts, where children enact roles such as hunter, trader, or caregiver. These enactments function as gateways into institutional reality, providing both a general framework for understanding social norms and a concrete familiarity with the practices that sustain them.

The child does not simply learn language in isolation but learns how language operates within systems of social organisation. This developmental pathway mirrors the broader evolution of language, where symbolic capacity and social structure co-evolve, each reinforcing the other. At the core of this process lies a fundamental paradox: institutional facts are both fictional and real. They are fictional in the sense that they depend on collective agreement rather than intrinsic properties, yet they are real in their consequences, shaping behaviour, expectations, and social relations. Humans navigate this paradox through a dual cognitive system. On one level, institutional facts are treated as objective features of the world, guiding action without constant reflection on their constructed nature. On another level, individuals retain the capacity to recognise their intersubjective basis, particularly when those facts are challenged or replaced. The example of currency illustrates this dynamic clearly. Money functions as a stable and objective reality within everyday life, yet its value can collapse or transform when collective recognition shifts.

This dual awareness parallels human responses to fiction more broadly. People can experience emotional engagement with imagined scenarios while simultaneously recognising their fictional status, suggesting that the cognitive mechanisms underlying institutional reality and narrative imagination are closely related. Language, in this context, serves as the primary tool for coordinating these shared fictions. It allows individuals to align their private imaginings, transforming them into collectively recognised structures that organise social life.

The evolution of performative speech acts likely built upon earlier symbolic practices, such as ritual, body marking, or gift exchange, where meaning and status were enacted through action rather than words. Language introduced a more efficient and flexible medium for these processes, enabling the rapid creation and modification of institutional realities. What previously required elaborate ritual could now be accomplished through a declarative act, provided that the necessary social conditions were met. This efficiency, however, does not eliminate the dependence on trust and cooperation. Institutional facts remain fragile, sustained only by the continued participation and recognition of the community. Their stability is therefore contingent, always open to renegotiation and transformation. The broader implication of this analysis is that human social life is fundamentally structured by collective fictions that are made real through language. Institutions, norms, and roles are not given by nature but produced through ongoing communicative practices. The ability to create and sustain these fictions represents a uniquely human form of cognition, one that integrates imagination, cooperation, and normative reasoning. Language does not simply reflect this capacity; it constitutes it. By enabling individuals to coordinate their imaginings, language creates a shared space in which social reality can emerge. In this sense, to speak is not only to communicate but to participate in the continual construction of the world, where what is said becomes what is, not by necessity, but by agreement.

Wyman, E. (2014) *'Language and Collective Fiction: From Children's Pretence to Social Institutions'*, in Dor, D., Knight, C. and Lewis, J. (eds.) *The Social Origins of Language*. Oxford: Oxford University Press.

The Deep Time of Speech: Language Before Modernity

Dan Dediu and Stephen C. Levinson in 'The Emergence of Modern Language and Its Implications' challenge the conventional narrative of language as a recent achievement, arguing instead that modern linguistic capacities extend far deeper into evolutionary time, emerging gradually through a prolonged interplay of social interaction, biological adaptation, and cultural accumulation. At the centre of this re-evaluation lies a fundamental shift in perspective: language is not an isolated cognitive breakthrough but a social phenomenon embedded within an already existing interactional infrastructure. Human communication, particularly its rapid turn-taking and cooperative dynamics, predates fully developed language and provides the scaffold upon which linguistic complexity was built. Language, in this sense, does not create social interaction but intensifies and extends it, refining an ancient system of coordinated exchange that may reach back millions of years. This position immediately calls into question the long-standing hypothesis of a 'modern human revolution', which located the emergence of language, art, and symbolic culture in a relatively recent cognitive leap approximately forty thousand years ago. Such a model, largely derived from European archaeological records, suggested a sudden transformation that distinguished modern humans from their predecessors.

Yet broader evidence, particularly from Africa, reveals no such abrupt discontinuity. Instead, both anatomical and behavioural changes appear distributed across extended periods, accumulating

gradually rather than erupting suddenly. The so-called revolution dissolves into a process of migration and diffusion, where populations carrying already developed capacities spread outward, rather than inventing them anew. This reframing also transforms the understanding of Neandertals. Once cast as cognitively inferior, they are now recognised as participants in complex cultural practices, capable of sophisticated tool production, symbolic behaviour, and social care. Their Mousterian technologies and use of pigments indicate not only technical skill but also symbolic engagement with their environment. Crucially, anatomical and genetic evidence further supports their capacity for speech. The presence of a modern-like hyoid bone suggests the physical ability to produce a wide range of vocal sounds, while similarities in auditory structures imply comparable perceptual capacities. The discovery that Neandertals possessed the same variant of the FOXP2 gene associated with speech in modern humans strengthens the argument that the biological foundations of language were already in place before the divergence of these populations. If Neandertals shared both the anatomical and genetic prerequisites for language, then the origins of modern linguistic capacity must be pushed back at least half a million years, if not further. This extended timeline carries significant implications.

Language can no longer be understood as a recent innovation tied exclusively to *Homo sapiens* but must be seen as a shared inheritance from earlier hominin populations. The diversity of contemporary languages, often treated as a product of recent cultural evolution, may instead contain traces of much older interactions, including exchanges between different human lineages such as Neandertals and Denisovans. Language thus becomes a palimpsest, layered with contributions from multiple populations over vast stretches of time. This perspective also undermines the assumption that complex culture is a reliable indicator of linguistic sophistication. The existence of anatomically modern human groups with relatively simple technologies demonstrates that cultural complexity does not directly map onto cognitive or linguistic capacity. Language may persist and evolve independently of other cultural markers, shaped by local conditions rather than following a universal trajectory of progress. The notion of language as a cultural artefact becomes central here. While biological evolution provides the necessary substrate, the form and complexity of language are largely products of cultural processes. These processes operate through what can be described as cultural ratcheting, where innovations accumulate and stabilise over generations, leading to increasingly complex systems. Unlike biological evolution, which operates through genetic inheritance, cultural evolution allows for rapid adaptation and diversification, enabling languages to respond to changing social and ecological environments. Yet this accumulation is not linear.

It is shaped by demographic factors, patterns of interaction, and the dynamics of transmission, resulting in a highly variable and historically contingent landscape of linguistic forms. The co-evolution of genes and culture further complicates the picture. Biological adaptations may facilitate certain communicative behaviours, which in turn create new selection pressures that shape genetic evolution. This feedback loop blurs the distinction between nature and culture, suggesting that language emerges from their continuous interaction rather than from either domain alone. The interactional niche within which language develops is particularly significant. Human communication is characterised by rapid, cooperative turn-taking, a feature that distinguishes it from other forms of animal communication. This capacity for coordinated exchange likely predates language and provides the temporal and social structure necessary for its development. Language evolves to fit this niche, enhancing its efficiency and expanding its expressive range. In this sense, the origins of language lie not in the invention of symbols but in the refinement of interaction. Cooperative instincts play a decisive role in this process. The ability to share intentions, infer the mental states of others, and coordinate behaviour within a group creates the

conditions for cultural transmission. These capacities, often described as forms of shared intentionality, enable individuals to participate in collective activities that require communication beyond immediate perception. Language emerges as the most efficient means of supporting these activities, allowing for the transmission of knowledge, the coordination of action, and the maintenance of social bonds across time and space.

The timeline proposed by Dediu and Levinson, extending from early Homo species through Homo heidelbergensis to modern humans, reflects this gradual accumulation of capacities. Rather than a single origin point, language appears as an evolving system that becomes increasingly complex as biological and cultural factors interact. This long duration emphasises that language is not a finished product but an ongoing process, continually reshaped by the conditions in which it is used. Its emergence marks not a moment of creation but a phase transition in human evolution, where communication becomes capable of sustaining complex social life. To understand language in this way is to recognise it as both ancient and dynamic, rooted in deep evolutionary history yet constantly renewed through use. It is a system that carries the traces of its origins while remaining open to transformation, reflecting the interplay of continuity and change that defines human existence. By situating language within this extended temporal framework, one can see it not as a sudden gift of modernity but as a slowly assembled capacity, forged through countless interactions across generations, and sustained by the social worlds that continue to give it life.

Dediu, D. and Levinson, S.C. (2014) 'The Emergence of Modern Language and Its Implications', in Dor, D., Knight, C. and Lewis, J. (eds.) The Social Origins of Language. Oxford: Oxford University Press.

The Fiction of Equality: Language in the Realm of Symbolic Power

Chris Knight in 'Language and Symbolic Culture: An Outcome of Hunter-Gatherer Reverse Dominance' situates the emergence of language within the broader formation of symbolic culture, arguing that human communication cannot be understood apart from the collective fictions that structure social life and the political transformations that made such fictions viable. Symbolic culture introduces a domain fundamentally distinct from physical reality, populated by constructs such as myths, moral rules, promises, and rituals—entities that exist only insofar as they are collectively believed. This raises a central evolutionary question: how could a species grounded in biological survival come to inhabit and depend upon a world of shared imagination? The answer lies not in individual cognition alone but in the social conditions that made belief itself a stable and functional strategy. Symbolic culture is not an accidental by-product of intelligence but a system sustained by cooperation, trust, and the capacity to enforce shared meanings. The distinction between brute facts and institutional facts provides a conceptual entry point into this domain. Brute facts exist independently of human perception, while institutional facts depend entirely on collective recognition. Yet once established, institutional facts acquire a form of objectivity, guiding behaviour as if they were natural properties of the world. Currency exemplifies this paradox: it has no intrinsic value, yet functions as an unquestioned reality within the system that sustains it.

Language operates in a similar way. As Saussure suggested, meaning is not inherent in words but emerges from a network of relations maintained by social agreement. Against views that treat language as a purely biological system, this perspective emphasises its embeddedness in symbolic culture, where communication relies on shared fictions rather than direct correspondence with reality. The origins of this symbolic domain are illuminated by archaeological evidence that

extends far beyond earlier assumptions of a sudden cognitive revolution. Discoveries from Africa reveal that symbolic practices—such as the use of ochre pigments and personal ornaments—were present tens of thousands of years earlier than previously believed, indicating a gradual development of symbolic behaviour. Competing interpretations of this evidence reflect different theoretical commitments. Some argue for a deep and continuous emergence of symbolic capacities, others for a threshold moment when symbolism became central to human life, and still others for a relatively recent genetic shift that enabled full cognitive modernity. What unites these perspectives is the recognition that symbolic culture cannot be reduced to isolated artefacts; it represents a transformation in how humans organise meaning, identity, and social relations. Theoretical models further explore the mechanisms underlying this transformation. One approach emphasises the role of shared fictions in regulating cooperation among strangers, suggesting that symbolic systems provide a framework for coordinating behaviour beyond immediate kinship. Another highlights the importance of costly rituals, which signal commitment and establish trust within groups.

These rituals function as credibility devices, ensuring that participants are genuinely invested in the shared system of meaning. Other perspectives trace symbolism to the mimetic capacities of early humans, where imitation and performance gradually evolved into structured cultural practices. Still others focus on the interpretive dimension of symbolic communication, where meaning often depends on the ability to recognise and navigate forms of intentional falsehood, such as metaphor and irony. Across these models, a common theme emerges: symbolic culture requires a balance between reliability and flexibility, between signals that are trustworthy and those that are efficient. Language occupies a crucial position within this balance. It is a system of low-cost, highly flexible signals that would be unstable without the trust generated by ritual and social cohesion. The paradox of symbolic communication lies in its reliance on what might be called sanctioned unreliability. Words are not tied to immediate reality, yet they function effectively because they are embedded in a system of shared belief. Ritual practices provide the foundation for this system, creating a context in which symbolic communication can be trusted despite its inherent arbitrariness. Language thus depends on a prior social infrastructure that transforms potential deception into functional communication. The emergence of this infrastructure is closely linked to changes in social organisation, particularly the development of reverse dominance. In contrast to primate hierarchies based on physical power, early human groups appear to have formed coalitions that actively suppressed attempts at domination, promoting egalitarian relations. This shift had profound implications for communication. In a context where authority is distributed and enforced collectively, symbolic systems can flourish, as no single individual controls meaning. Instead, meaning is negotiated and maintained through group consensus.

Reverse dominance therefore creates the political conditions necessary for symbolic culture, transforming communication from a tool of dominance into a medium of cooperation. Within this framework, the role of female coalitions becomes particularly significant. The model of female cosmetic coalitions proposes that women used symbolic practices, such as body painting and adornment, to regulate reproductive dynamics and reduce male dominance. By obscuring biological signals and emphasising collective identity, these practices fostered cooperation and aligned reproductive interests with social stability. Ritualised use of pigments and other symbolic markers reinforced group cohesion, creating a shared framework within which communication could operate. This perspective integrates biological and social factors, showing how reproductive strategies could drive the emergence of symbolic systems. Symbolic culture, in this account, is not merely a cognitive achievement but a product of social negotiation, where biological imperatives

are mediated through collective practices. At its core, symbolic culture can be understood as a system of socially accepted fictions. These fictions are not false in the sense of being erroneous but in the sense of being constructed, dependent on agreement rather than intrinsic necessity. Their power lies in their ability to organise behaviour, create obligations, and sustain social order. Language is the primary medium through which these fictions are articulated, maintained, and transformed. It allows individuals to participate in a shared reality that extends beyond immediate perception, enabling the coordination of complex social systems. The emergence of language is therefore inseparable from the emergence of a world in which imagination is collectively regulated and socially enforced.

The evolutionary significance of this development lies in its capacity to stabilise cooperation among large groups. Trust, once grounded in direct interaction and observable signals, becomes mediated by symbolic systems that allow for coordination at a distance. Egalitarian structures reinforce this trust by distributing authority and preventing the monopolisation of meaning. Female strategies contribute by aligning social and reproductive interests, ensuring that symbolic practices serve collective rather than individual goals. Together, these elements create a system in which language can function as an efficient and flexible means of communication, supported by a robust social foundation. Language, in this sense, is not an isolated phenomenon but the central component of a broader symbolic order. It emerges from the intersection of biology, culture, and politics, shaped by the need to manage cooperation, regulate power, and sustain shared belief. Its evolution reflects not a single innovation but a complex process in which social structures and communicative practices co-evolve, producing a form of life in which reality itself becomes partially constructed through collective imagination. To speak is therefore not only to communicate but to participate in the maintenance of a world that exists because it is believed, a world where fiction becomes fact through the force of shared agreement.

Knight, C. (2014) 'Language and Symbolic Culture: An Outcome of Hunter-Gatherer Reverse Dominance', in Dor, D., Knight, C. and Lewis, J. (eds.) The Social Origins of Language. Oxford: Oxford University Press.

The Moral Voice: Language as Shared Mind

Jordan Zlatev in 'The Co-Evolution of Human Intersubjectivity, Morality, and Language' develops a framework in which language is inseparable from the emergence of shared minds and shared norms, arguing that human communication evolved not merely as a system of symbols but as a mode of coordinated consciousness grounded in intersubjectivity and moral regulation. Language, in this account, rests on two intertwined foundations: a symbolic system of meanings and conventions, and a cooperative practice through which these meanings are used to exchange information and construct shared beliefs. Yet this dual structure introduces a theoretical difficulty. Cooperation on the scale required for language appears to exceed the explanatory power of traditional gene-centred models of evolution, which prioritise individual fitness. To resolve this tension, the evolution of language must be linked to forms of sociality that transcend individual advantage—specifically, intersubjectivity and morality. Intersubjectivity refers to the capacity to share experiences, emotions, and intentions with others, while morality introduces collectively enforced norms of right and wrong. Both phenomena require a level of psychological alignment that cannot be reduced to immediate self-interest. Their emergence signals a shift from isolated individuals to integrated groups capable of sustaining shared realities.

This shift becomes intelligible when viewed through multi-level selection, where evolutionary pressures operate not only at the level of genes and individuals but also at the level of groups. Cooperative groups, bound by shared norms and communicative systems, gain advantages over less cohesive ones, allowing traits that support cooperation to proliferate even when they involve individual costs. The roots of these capacities can be traced to non-human primates, which display rudimentary forms of empathy, reconciliation, and cooperation. Chimpanzees, for instance, exhibit targeted helping and emotional responsiveness, yet these behaviours remain limited in scope and lack the generalised, rule-governed structure characteristic of human morality. Their social interactions are largely situational, driven by immediate contexts rather than by abstract principles. Humans, by contrast, develop systems of norms that are internalised, generalised, and collectively enforced. Transgressions are not merely resisted but sanctioned, indicating the presence of shared standards that extend beyond individual relationships. This transformation from situational cooperation to normative sociality marks a decisive step in human evolution. It also introduces a new problem: how can such large-scale cooperation be maintained in the presence of free-riders, individuals who benefit from group efforts without contributing? Traditional models such as kin selection and reciprocal altruism provide partial answers, explaining cooperation among relatives or through repeated exchanges. However, they struggle to account for cooperation among unrelated individuals and to address the problem of second-order free-riders, those who cooperate but fail to enforce norms.

Cultural group selection offers a more comprehensive explanation by suggesting that groups with strong norms and effective communication systems outcompete others, leading to the spread of cooperative behaviours. Within this framework, language becomes both a product and a driver of group-level selection, enabling the transmission of norms and the coordination of collective action. Theories of human social evolution provide different perspectives on how these processes unfolded. Dunbar's model emphasises the role of language in maintaining social bonds within increasingly large groups, replacing physical grooming with vocal interaction. Deacon proposes that symbolic communication and moral norms co-emerged as part of a social contract regulating reproductive and provisioning behaviours, linking language to the regulation of social relations. Tomasello focuses on collaborative foraging as a context in which shared intentionality and mutual dependence fostered the development of communicative conventions. Hrdy, in turn, highlights the role of alloparenting, where cooperative child-rearing created a social environment rich in emotional attunement and mutual responsiveness. Each of these accounts identifies a different aspect of the same transformation: the emergence of a form of sociality in which individuals are deeply attuned to one another and capable of coordinating their actions through shared understanding. Despite their differences, these theories converge on several key points. They all imply that human sociality evolved in contexts requiring cooperation beyond immediate kinship, that it was shaped by selection pressures operating at multiple levels, and that it involved the gradual development of shared intentionality and normative regulation. They also suggest different temporal frameworks, ranging from early hominin species to more recent evolutionary periods, reflecting the complexity and multi-layered nature of the process. Importantly, developmental evidence reinforces these insights.

The emergence of intersubjectivity in early childhood, particularly in contexts of caregiving and joint attention, provides a microcosm of the evolutionary process. Infants learn to share attention, interpret intentions, and participate in coordinated activities, laying the groundwork for both moral understanding and linguistic communication. The co-evolutionary framework proposed integrates these elements into a sequence of overlapping developments. Intersubjectivity emerges first, rooted in practices such as alloparenting that foster empathy and shared experience. Morality

follows, as groups develop norms to regulate behaviour and maintain cooperation. Language then arises within this context, providing a system for articulating and reinforcing these norms, as well as for extending intersubjective coordination across time and space. Each stage builds upon the previous ones, creating a feedback loop in which communication, sociality, and cognition evolve together. Language is thus not an isolated adaptation but a central component of a broader system that integrates emotional, cognitive, and social processes. Its function extends beyond the transmission of information to the maintenance of social order and the construction of shared reality. Through language, individuals can articulate norms, negotiate conflicts, and coordinate collective action, making it indispensable for the functioning of complex societies. At the same time, this system remains fragile. The conditions that gave rise to intersubjectivity and morality—close social bonds, cooperative practices, and shared responsibilities—are not guaranteed to persist.

As societies become more individualised and detached from these conditions, the foundations of cooperation may weaken. The warning that emerges is not merely evolutionary but existential: the capacities that define human social life are contingent and must be sustained through practice. Language, morality, and intersubjectivity are not fixed traits but ongoing achievements, continually reproduced through interaction. To lose the social conditions that support them would be to undermine the very basis of human community, revealing that the voice of language is also the voice of shared humanity, dependent on the fragile alignment of minds that makes communication possible.

Zlatev, J. (2014) 'The Co-Evolution of Human Intersubjectivity, Morality, and Language', in Dor, D., Knight, C. and Lewis, J. (eds.) The Social Origins of Language. Oxford: Oxford University Press.

The Law Within Words: Language as Normative Engine

Ehud Lamm in 'Forever United: The Co-Evolution of Language and Normativity' advances the claim that language and norms are not merely associated features of human life but mutually constitutive systems, evolving together in a dynamic process through which communication becomes inseparable from obligation, and meaning from regulation. Language is never neutral. It operates within frameworks that determine what counts as appropriate, acceptable, or correct, while norms themselves depend on linguistic articulation to be transmitted, justified, and contested. This bidirectional relationship reveals that the emergence of language cannot be understood without accounting for normativity, just as norms cannot be sustained without language. Norms are not simply external rules imposed by authority but possess what can be called independent normativity, an intrinsic force that motivates behaviour and generates emotional responses such as guilt, anger, or blame when violated. This internalisation transforms norms into psychological realities, embedding them within the individual while maintaining their social character. Language reflects and reinforces this structure at every level. It encodes expectations through grammatical forms such as imperatives and modal expressions, organises interaction through conventions like turn-taking, and enables the performance of speech acts that carry normative weight.

To speak is therefore to enter a space governed by rules, where meaning is inseparable from the expectations that guide its use. The co-development of language and normativity becomes visible in early childhood, where both capacities emerge together within shared social contexts. Observations of young children reveal that linguistic expressions are often embedded in ritualised

interactions, such as greetings or farewells, which are treated not as optional but as necessary sequences that must be completed. The insistence on these rituals demonstrates an early sensitivity to norm-governed behaviour, suggesting that children do not merely learn words but learn how words function within structured interactions. Simple expressions like ‘mine’ or ‘yours’ illustrate how linguistic categories are intertwined with normative concepts such as ownership and fairness. These early forms are not isolated linguistic achievements but components of a broader system in which language and social rules develop in tandem. Gestures and words initially operate together, gradually differentiating as linguistic competence increases, yet their shared origin in communicative action remains evident. Play provides a crucial context for this development, offering a space in which children experiment with both language and norms. Through games, they learn not only how to use words but how to follow, enforce, and negotiate rules. Even at early stages, children display emotional reactions to norm violations, indicating that the internalisation of norms precedes full linguistic mastery. This developmental evidence suggests that the roots of the co-evolutionary process lie in shared activities that require coordination, cooperation, and mutual understanding.

The evolution of language and normativity can be conceptualised as a sequence of overlapping stages, each reinforcing the other. Innovations in communication spread through communities when they offer advantages in expression or coordination, but their adoption depends on normative negotiation. New forms must be justified, accepted, and integrated into existing practices. This process involves cycles of commitment, challenge, and revision, where individuals articulate reasons for their actions and respond to the evaluations of others. Language plays a central role in this negotiation, providing the medium through which norms are clarified and contested. Over time, repeated interactions stabilise both linguistic and normative systems, embedding them within cultural practices and, eventually, shaping biological predispositions. This co-evolutionary dynamic leads to the development of increasingly complex cognitive and emotional capacities. The need to navigate norms and communicate effectively fosters meta-cognition, allowing individuals to reflect on their own thoughts and those of others. Emotional responses become more differentiated, supporting the recognition and enforcement of norms. Perspective-taking abilities expand, enabling individuals to consider multiple viewpoints and to anticipate the reactions of others. These capacities are not by-products but integral components of the system, emerging from the continuous interaction between language and normativity. One of the most distinctive features of human normativity is its generality.

Norms often take the form of abstract rules that apply across situations, requiring individuals to represent and evaluate hypothetical scenarios. This capacity is closely linked to language, which provides the means to articulate general principles and to reason about possibilities. Modal expressions such as ‘ought’ and ‘might’ reflect this connection, bridging normative and epistemic domains. The co-evolution of these forms suggests that the ability to reason about what should be and what could be arises from a shared underlying process. The internalisation of norms also introduces biases in learning and transmission. Norms that align with existing predispositions are more easily adopted, shaping cultural evolution by favouring certain patterns over others. Emotional mechanisms further reinforce this process, as feelings of approval or disapproval guide behaviour and facilitate social cohesion. These mechanisms ensure that norms are not merely understood but felt, integrating cognition and emotion in a way that sustains social order. The predictive power of this framework extends across multiple domains. It suggests that early linguistic behaviours should correlate with normative concepts, that cultural complexity should be accompanied by corresponding developments in language and norms, and that impairments in one domain should affect the other.

Cross-cultural variations provide additional evidence, revealing both universal patterns and culturally specific differences in how language and normativity are expressed. These variations demonstrate that while the co-evolutionary process is general, its outcomes are shaped by local conditions and historical trajectories. The broader implication is that language and normativity form a single system that defines human social existence. Language is not simply a tool for communication but a mechanism for organising behaviour, expressing commitments, and negotiating shared realities. Norms are not external constraints but integral to the functioning of language, providing the framework within which communication becomes meaningful. Together, they create a system in which individuals are both participants and regulators, continually shaping and being shaped by the practices in which they engage. The evolution of this system reflects the interplay of cultural innovation, social interaction, and biological adaptation, producing a form of life in which meaning and obligation are inseparable. To understand language is therefore to understand the normative structures that sustain it, and to recognise that every act of communication is also an act of participation in a shared system of rules that both constrain and enable human action.

Lamm, E. (2014) 'Forever United: The Co-Evolution of Language and Normativity', in Dor, D., Knight, C. and Lewis, J. (eds.) The Social Origins of Language. Oxford: Oxford University Press.

The Theatre of Talk: Speech as Competitive Display

Jean-Louis Dessalles in 'Why Talk?' from *The Social Origins of Language* reframes the problem of human communication by rejecting the comforting assumption that language exists primarily to share useful information, arguing instead that speech functions as a competitive display through which individuals signal their value within social networks. The initial paradox is disarmingly simple yet devastating for conventional explanations: if information is valuable, why is it so freely given, and if it is not, why is it so eagerly consumed? Traditional theories that present language as a cooperative tool for coordination, teaching, or planning fail to account for the sheer volume and apparent triviality of everyday speech. Much of what people say serves no immediate practical function, and yet it occupies a substantial portion of human life. The persistence of this behaviour suggests that language cannot be reduced to utility; it must be understood as serving a deeper social function tied to status, attention, and alliance formation. Empirical observations reinforce this conclusion. Humans spend a remarkable proportion of their waking hours engaged in verbal activity, producing thousands of words daily, most of which occur in casual, unstructured conversation rather than in goal-directed tasks.

This spontaneous language use falls into two dominant forms: narrative and discussion. Narratives recount events, often highlighting their unexpected or emotionally charged aspects, while discussions revolve around the resolution of contradictions in belief or desire. These forms are not random; they reveal the underlying logic of conversational behaviour. In narratives, the emphasis on the unexpected is crucial. An event becomes worth telling not because it is routine but because it deviates from expectation, capturing attention and demonstrating the speaker's sensitivity to significant occurrences. The recounting of such events serves a dual purpose. It positions the speaker as someone capable of detecting what matters, and it allows listeners to participate vicariously in the emotional and cognitive experience of the event. The story becomes a shared moment, not because it conveys necessary information, but because it showcases the speaker's perceptual acuity and emotional responsiveness. Discussion, by contrast, shifts the focus from events to reasoning. Here the speaker engages in the resolution of inconsistencies, whether factual or motivational, displaying an ability to navigate complex cognitive terrain. The compulsion to

argue, to clarify, to refine positions, reflects a different kind of competence: not the detection of anomalies, but the management of coherence. Both forms of speech, though distinct in structure, converge in function. They are arenas in which individuals demonstrate qualities that make them desirable social partners. Language, in this light, becomes a medium of social evaluation. Each conversational move acts as a signal, revealing cognitive alertness through the identification of noteworthy events, emotional transparency through the sharing of subjective experience, and logical capacity through argumentative engagement.

These signals are not neutral; they are competitive. Speakers vie for attention, for recognition, for the implicit endorsement of others who assess their reliability and value as allies. Conversation thus resembles a stage where individuals perform their competence, seeking to establish their position within a network of relationships. This competitive dimension becomes intelligible when placed within an evolutionary context marked by a fundamental shift in social organisation. In primate societies, physical dominance often determines status and reproductive success. Strength, aggression, and the capacity to impose one's will define hierarchy. However, the emergence of lethal weapons in human evolution disrupts this structure. When individuals can be killed from a distance or through coordinated action, physical superiority loses its decisive advantage. Survival becomes contingent not on strength alone but on the ability to form alliances and to anticipate threats. In such a context, information acquires a new value. The individual who can detect danger, interpret social cues, and reason effectively becomes indispensable. Language evolves as the primary means of displaying these abilities. It allows individuals to signal their awareness of the environment, their emotional reliability, and their cognitive competence, thereby attracting allies and deterring adversaries. This transformation from muscle to information reshapes the entire communicative landscape. Narratives signal the capacity to anticipate and interpret unexpected events, suggesting vigilance and situational awareness. Emotional expression within these narratives indicates transparency, reducing uncertainty about intentions and fostering trust. Argumentative discussions demonstrate reasoning skills, providing evidence of the ability to navigate complex social and practical problems. Together, these elements form a triad of qualities essential for survival in a world where cooperation and alliance outweigh brute force. The features of human language that often appear puzzling from a utilitarian perspective become intelligible within this framework.

The vastness of vocabulary reflects the need to describe rare and unexpected situations with precision. The prevalence of seemingly trivial conversation reveals itself as a continuous process of signalling competence rather than a failure of efficiency. The universality of talkativeness across genders challenges models that tie language exclusively to specific functions such as courtship or instruction. Instead, language emerges as a general mechanism for social positioning, accessible to all members of the group. Even the apparent futility of much speech becomes meaningful, as it provides the opportunity for individuals to display their abilities in a low-risk environment. The hypothesis that risk-free killing altered human social dynamics offers a compelling explanation for why such a system would evolve. In a world where threats can emerge unpredictably and alliances determine survival, the ability to signal informational competence becomes a decisive advantage. Language, in this sense, is not merely a tool for communication but a strategy for survival, enabling individuals to navigate a complex social landscape where trust must be earned and maintained. The implications extend beyond the evolutionary past.

Contemporary phenomena, such as the proliferation of communication in digital environments, can be understood as extensions of this same logic. Social media platforms, for instance, amplify the display function of language, transforming everyday speech into a continuous performance of

identity and competence. The underlying mechanism remains unchanged: individuals communicate not only to inform but to be recognised as valuable participants in a shared social space. Language, therefore, cannot be fully understood as a cooperative exchange of information. It is a system of competitive display embedded within a cooperative framework, where the sharing of information serves the deeper purpose of establishing social worth. Humans speak not because communication is always necessary, but because speaking allows them to demonstrate who they are and why they matter. In this theatre of talk, every utterance becomes a signal, every conversation a negotiation of status, and every speaker a performer seeking recognition in the collective gaze of others.

Dessalles, J.-L. (2014) 'Why Talk?', in Dor, D., Knight, C. and Lewis, J. (eds.) The Social Origins of Language. Oxford: Oxford University Press.

The Memory That Speaks: Imagination as Linguistic Engine

Simona Ginsburg and Eva Jablonka in 'Memory, Imagination, and the Evolution of Modern Language' advance a perspective in which language emerges not as an isolated communicative system but as part of a tightly interwoven ensemble of memory, imagination, and social practice, arguing that the capacity to instruct imagination is grounded in earlier developments of episodic recall and symbolic play. Language, from this standpoint, depends on the ability to reconstruct experiences beyond the immediate present, to reassemble fragments of the past and project them into possible futures. This capacity did not arise suddenly but developed gradually through the co-evolution of cognitive and social processes that enabled individuals to detach signs from their original contexts and redeploy them within new configurations. Archaic human populations, living hundreds of thousands of years ago, already displayed the behavioural complexity necessary for this transformation. Their use of fire, production of standardised tools, and engagement in cooperative subsistence strategies indicate a level of coordination and planning that presupposes advanced memory and communication. The presence of ritual practices, suggested by the use of pigments such as ochre, points further to a symbolic dimension in which shared meanings extend beyond immediate utility.

Within these communities, features such as alloparenting and sustained cooperation created an environment in which individuals were embedded in dense networks of interaction, fostering both emotional attunement and cognitive interdependence. It is within this context that a proto-linguistic system begins to take shape, one capable of transcending the here and now by linking words to episodes that can be recalled, reshaped, and shared. The co-evolution of language and memory becomes central to this process. Early insights into this relationship emphasised that language allows for the retention and manipulation of signs independently of their original situations. Unlike animal communication, which remains tied to immediate contexts, human communication develops a form of sign-based memory in which symbols can be stored, retrieved, and recombined. This distinction becomes clearer when considering the difference between episodic and semantic memory. Episodic memory involves the recall of specific experiences, while semantic memory provides the conceptual framework within which those experiences are understood. In humans, these systems interact to produce autobiographical memory, a structured sense of personal history that integrates individual experiences into a coherent narrative. In earlier hominin populations, the expansion of semantic categories and the increasing complexity of social and technological life would have required enhanced memory capacities. Tool production, cooperative hunting, and social coordination all depend on the ability to recall past actions, anticipate outcomes, and share knowledge across individuals. These demands likely drove the

development of a symbolic network in which linguistic signs became linked to shared experiences, allowing for more efficient communication and coordination. At the same time, this development introduced new cognitive challenges. As individuals began to use language to recall and communicate experiences, they faced the problem of distinguishing between different sources of information. Memories of personal events, imagined scenarios, and narratives received from others could become conflated, creating ambiguity about their origin. This phenomenon, observed in children as source confusion, suggests that the evolution of language placed pressure on cognitive systems to develop mechanisms for tracking the provenance of information. The emergence of autobiographical memory can be understood as a response to this pressure, providing a framework for organising experiences in relation to the self and distinguishing between what has been lived, imagined, or communicated.

The developmental role of play becomes crucial in this context. Human childhood, characterised by prolonged dependency and extended brain development, provides a unique period for the exploration and refinement of cognitive and social skills. Pretend play emerges early in life and develops into increasingly complex forms of symbolic activity, allowing children to experiment with representations detached from immediate reality. This form of play is not merely recreational but serves as a laboratory for the development of symbolic reasoning. Through play, children learn to associate signs with meanings, to manipulate these associations, and to explore their implications in imagined scenarios. Pretend play also contributes to emotional regulation, as children learn to control impulses and navigate cooperative interactions within shared imaginative contexts. By engaging in role-playing and rule-based games, they acquire an understanding of social norms and expectations, integrating linguistic and normative competencies. The connection between play and language becomes particularly evident when words themselves become objects of play. Children experiment with sounds, meanings, and combinations, treating language as a flexible system that can be manipulated and explored. This playful engagement fosters the development of metaphor, analogy, and relational reasoning, all of which are essential for complex linguistic expression. From an evolutionary perspective, this suggests that the innovations of adult communication were not simply transmitted to younger generations but were actively reworked and simplified through the processes of play. Children, in this sense, act as agents of cultural transformation, refining and stabilising linguistic systems through their exploratory behaviour. The interplay between memory, imagination, and language thus forms a co-evolutionary ensemble in which each component supports and constrains the others.

The development of episodic and semantic memory enables the reconstruction and abstraction of experience, while imagination allows these reconstructions to be recombined into new configurations. Language provides the means for communicating these configurations, transforming individual cognition into shared knowledge. Social practices, particularly those involving cooperation and caregiving, create the conditions under which these capacities can develop and be transmitted. The result is a system in which communication is not limited to the exchange of immediate information but extends to the sharing of possibilities, narratives, and conceptual structures. Language, within this framework, is not merely a tool for describing reality but a mechanism for generating it, allowing individuals to construct and inhabit worlds that exist beyond direct perception. Its evolution reflects the integration of cognitive and social processes into a unified system capable of sustaining complex forms of interaction. By situating language within this ensemble, one can see it as the outcome of a long process in which memory, imagination, and social life converge, producing a form of communication that is at once grounded in experience and capable of transcending it.

Ginsburg, S. and Jablonka, E. (2014) 'Memory, Imagination, and the Evolution of Modern Language', in Dor, D., Knight, C. and Lewis, J. (eds.) *The Social Origins of Language*. Oxford: Oxford University Press.

The Smile Without the Cat: Meaning Before Language

James R. Hurford in 'The Origins of Meaning' reconceptualises semantics by severing its traditional dependence on language and relocating its origins in a pre-linguistic world of mental representations, where meaning exists prior to words, prior even to communication itself, as an adaptive relation between organisms and their environments. In this account, language does not create meaning but inherits and reorganises a much older cognitive capacity. Language is typically understood as a system that links meanings to signals, translating internal content into external form and back again. This dual structure gives rise to the familiar distinction between semantics and pragmatics. Semantics concerns the relation between expressions and what they refer to, while pragmatics addresses the use of those expressions by speakers in specific contexts. Yet this division, while useful within linguistics, obscures a deeper question: how did meaning arise before language existed to express it? To answer this, meaning must be detached from linguistic form. It must be treated not as a property of words or sentences, but as a feature of cognition itself. The metaphor of the Cheshire Cat's smile captures this shift precisely: meaning persists even when language disappears. What remains is not silence, but a structured engagement with the world, mediated by perception and memory.

Traditional philosophical approaches often locate semantics in the direct relation between language and reality, bypassing the mind as an intermediary. In contrast, an evolutionary perspective insists that meaning is always mediated by mental representations—concepts, beliefs, and intentions that organise experience. These representations do not arise from language; they precede it. Language, in turn, builds upon them, providing a system for their externalisation and coordination. From this standpoint, the origins of semantics lie in the adaptive requirements of living organisms. Survival depends on the ability to detect, categorise, and respond to elements of the environment. Neuronal activity associated with attention to objects or events is not arbitrary but shaped by evolutionary pressures. These patterns of activity constitute early forms of representation, enabling organisms to navigate their surroundings effectively. Such representations exhibit what philosophers term intentionality: they are about something. A mental state refers to an object, event, or condition in the world, establishing a relation between internal processes and external reality. This 'aboutness' does not require language. It can be observed in the behaviour of animals, whose actions often depend on accurate representations of their environment.

Examples of this are abundant. A bird that remembers the location of stored food, or a predator that adjusts its movements while stalking prey, demonstrates the use of internal representations. These are not linguistic beliefs, but they function as if they were true or false depending on their correspondence to reality. The organism behaves in ways that presuppose a structured understanding of its environment, even in the absence of words. Perception plays a central role in this process. Through repeated encounters with salient features of the world, organisms form stable categories that guide behaviour. These categories may be shaped by both learning and innate predispositions, reflecting the interaction between experience and evolutionary inheritance. Certain patterns—such as the rapid recognition of threats—may be hardwired, while others are acquired through interaction with the environment. The question of whether such categories constitute genuine concepts has been a matter of debate. Some argue that concepts require language, claiming that without linguistic articulation there can be no true belief or thought. Others

reject this restriction, pointing to behavioural evidence that suggests the presence of structured mental categories in animals. The latter view gains support from observations of consistent, context-sensitive responses to classes of stimuli, indicating that organisms group experiences in meaningful ways.

These early forms of representation can be described as proto-concepts. They lack the complexity and flexibility of human concepts, yet they perform a similar function: organising experience into categories that support action. A predator's recognition of prey, for instance, involves a generalised category that can be applied across different instances. This capacity for generalisation marks a significant step toward the kind of abstraction found in human cognition. Conceptual complexity exists on a continuum. At one end are simple reflexes, which do not involve representation in any meaningful sense. At the other are the rich, introspective concepts of human thought, capable of supporting reflection, inference, and symbolic manipulation. Proto-concepts occupy an intermediate position, providing a foundation upon which more elaborate systems can be built. Language transforms this foundation by introducing a system of symbols that can be combined, manipulated, and shared. It allows concepts to be externalised, stabilised, and transmitted across individuals and generations. Yet the essential structures of meaning—the capacity to represent, categorise, and relate to the world—are already in place before this transformation occurs. Understanding the origins of meaning therefore requires a shift in perspective. Rather than beginning with language and asking how it relates to the world, one must begin with the organism and its interaction with the environment. Meaning emerges from this interaction as a functional necessity, a way of organising experience to support survival and action.

This perspective also reframes the relationship between semantics and pragmatics. If meaning originates in pre-linguistic cognition, then the distinction between representation and use becomes less rigid. Both are aspects of a broader system in which organisms engage with their environment and with each other. Language refines and extends this system, but does not fundamentally alter its basis. The continuity between animal cognition and human language becomes evident within this framework. Human concepts, though vastly more complex, are rooted in the same basic processes that govern animal behaviour. The difference lies in the degree of abstraction and the capacity for symbolic manipulation, not in the existence of entirely new kinds of mental states. This continuity does not diminish the significance of language but situates it within a larger evolutionary narrative. Language amplifies and reorganises pre-existing capacities, enabling forms of thought and communication that would otherwise be impossible. It extends the reach of meaning, allowing it to operate beyond immediate perception and into domains of imagination, planning, and cultural transmission. The origin of meaning, then, is not a linguistic event but a cognitive one. It arises from the need to represent the world, to distinguish relevant from irrelevant, and to guide behaviour accordingly. Language inherits this capacity and transforms it, but the foundations remain visible in the structures of pre-linguistic cognition.

In recognising this, the study of meaning moves beyond the boundaries of language and into the broader domain of life itself. Meaning becomes a property of organisms engaged with their environment, a dynamic relation that evolves alongside the capacities that sustain it. The emergence of language marks not the beginning of meaning, but its expansion into a new and more complex form.

Hurford, J. R. (2014) The Origins of Meaning. Oxford: Oxford University Press.

The Bridge of Trust: Why Language Emerged at All

James R. Hurford in ‘The Origins of Meaning’ confronts a fundamental paradox at the heart of language evolution: if communication exposes individuals to deception, exploitation, and informational risk, why did such a system ever emerge and stabilise within human societies? The answer cannot lie in linguistic structure alone, but in the transformation of the social environment itself, where trust, cooperation, and shared interest became evolutionarily viable. The earliest steps toward language did not consist of full sentences or abstract grammar, but of elementary symbolic acts—gestures and signals tied to immediate contexts, capable of expressing simple propositional meanings. A pointing gesture combined with a vocalisation could indicate something like ‘this is food’ or ‘that is danger’. These proto-linguistic acts already required a crucial shift: they depended on the willingness of one individual to share information for the benefit of another. This willingness is not trivial in evolutionary terms. In most animal systems, information is either withheld or used strategically, not freely distributed. The rarity of such behaviour across species highlights the uniqueness of the human trajectory. Communication that benefits others more than oneself introduces the risk of exploitation. A signaler could mislead, manipulate, or deceive, gaining advantage at the expense of the receiver. For a communicative system to stabilise, mechanisms must exist that limit such exploitation. This implies that the evolution of language is inseparable from the evolution of social structures that support trust and reciprocity.

To understand this transition, it is useful to consider the analogy of a bridge. The early stages of construction appear disconnected, each element incomplete and functionally useless on its own. Yet when the final connection is made, the structure suddenly becomes transformative, enabling movement, exchange, and new forms of interaction. Language may have developed in a similar way, through incremental changes that only achieved full functionality once a critical threshold was crossed. At that point, communication became not merely possible but indispensable, reshaping the ecological and social landscape. This transformation can be understood through the concept of niche construction. Organisms do not simply adapt to their environments; they modify them, creating new conditions that in turn influence evolutionary pressures. Early humans, through cultural practices and social organisation, began to construct niches in which communication was advantageous. The transmission of knowledge—about tools, resources, or social relations—created a feedback loop in which better communication enhanced survival, and improved survival reinforced the value of communication. Within this feedback system, symbolic learning gained increasing importance. Individuals capable of recognising, storing, and transmitting shared signs had a distinct advantage. Over time, this led to the selection of cognitive capacities that supported more complex forms of representation. Language did not emerge as a single innovation but as the cumulative result of interactions between biological adaptation and cultural innovation.

Cooperation lies at the centre of this process, yet its evolutionary basis is multifaceted. One foundational mechanism is kin selection, which explains altruistic behaviour toward genetically related individuals. By assisting relatives, an organism indirectly promotes the survival of its own genes. This mechanism accounts for certain forms of information sharing, particularly within small, closely related groups. However, it cannot fully explain the expansion of communication to larger, more heterogeneous populations. Reciprocal altruism extends cooperation beyond kinship by introducing the principle of exchange. Individuals cooperate with the expectation that benefits will be returned in the future. Repeated interactions create a system of mutual dependency, where trust is gradually established through consistency. In such contexts, communication becomes valuable not only as a means of immediate coordination but as a tool for maintaining long-term relationships. Reliable information enhances reputation, while deception carries the risk of exclusion. Cultural practices further expand the scope of cooperation by redefining social

boundaries. Systems that treat non-kin as kin, through shared norms and identities, enable large-scale coordination. Language plays a crucial role in sustaining these systems, providing the means through which group identity is articulated and reinforced. Communication becomes both a practical tool and a symbolic marker, distinguishing insiders from outsiders.

Yet cooperation alone does not fully account for the complexity of language. Communication also serves competitive functions. It can signal intelligence, creativity, and social competence, enhancing an individual's status within a group. The hypothesis that language evolved partly through sexual selection suggests that linguistic ability may have functioned as a display trait, analogous to elaborate physical features in other species. Rich vocabulary, expressive modulation, and narrative skill could signal cognitive fitness to potential mates. This perspective finds support in the role of vocalisation in other species, where complex calls often serve as indicators of individual quality. However, the application of this model to human language encounters difficulties. Traits shaped by sexual selection typically exhibit clear differences between sexes, yet language ability is widely distributed across both. Moreover, linguistic competence develops early in life, before reproductive competition becomes relevant. These factors suggest that while sexual selection may have contributed to the elaboration of language, it cannot account for its origins. Alternative models emphasise the strategic and political dimensions of communication. The sharing of relevant information can enhance an individual's standing within a group, facilitating alliance formation and social influence. In this view, language emerges as a tool for negotiating relationships, where the ability to contribute valuable knowledge becomes a source of power. Communication is not purely cooperative but embedded in systems of competition and coalition-building.

Group-level dynamics also play a role. Communities with more effective communication systems are better able to coordinate actions, transmit knowledge, and maintain cohesion. Over time, such groups may outcompete others, leading to the spread of linguistic capacities. Language thus functions as both an individual and collective advantage, shaping the evolution of social structures. The emergence of language cannot be attributed to a single mechanism. It arises from the convergence of multiple processes: biological predispositions, cultural innovations, cooperative frameworks, and competitive pressures. Each contributes to different aspects of the system, from the capacity to learn symbols to the motivation to use them. What distinguishes human language is not merely its complexity, but the conditions under which it becomes viable. A world of pure competition would undermine communication, while a world of pure cooperation would not generate the need for elaborate expression. Language emerges in the tension between these forces, where individuals must both share and negotiate information within a structured social environment. The question 'why communicate?' therefore leads beyond language itself to the organisation of human society. Communication becomes possible when trust is sufficiently established to make information exchange beneficial, and when cognitive capacities allow for the manipulation of symbolic systems. It becomes necessary when survival and success depend on the ability to coordinate, persuade, and align with others.

Language, in this sense, is not simply a tool for describing the world, but a mechanism for constructing social reality. It binds individuals into networks of meaning, enabling cooperation at scales unmatched in the natural world. Its origins lie not in isolated innovation, but in the gradual alignment of biological and cultural evolution toward a shared system of representation.

Hurford, J. R. (2014) The Origins of Meaning. Oxford: Oxford University Press.

The Politics of Minds: Trust Before Language

James R. Hurford in 'The Origins of Meaning' advances the argument that the emergence of communication cannot be understood without first grasping the social intelligence that precedes it, particularly the fragile and contested capacity to interpret the intentions of others. Before language becomes possible, there must exist a minimal form of mind-reading, a capacity to navigate a world where behaviour is not merely observed but interpreted as purposeful. Life in primate groups is not governed by simple instinct but by a complex interplay of cooperation and manipulation. Individuals must anticipate the actions of others, adjust strategies, and respond to shifting alliances. This environment gives rise to what has often been described as Machiavellian intelligence—a form of cognition oriented toward social prediction and control. Within such a framework, cooperation is never purely altruistic; it is negotiated, contingent, and often strategic. At the centre of this negotiation lies the capacity commonly referred to as Theory of Mind. This is not a single faculty but a cluster of abilities that allow an individual to treat others as agents with perspectives, desires, and intentions. Even in its most rudimentary form, it involves a basic projection: the assumption that another organism, placed in a similar situation, might think and act in comparable ways. This projection does not require language, but it establishes the conditions under which communication could later emerge.

The difficulty lies in determining whether non-human primates genuinely possess such capacities or merely simulate them through simpler mechanisms. The distinction is not trivial. If primates truly represent the mental states of others, then the roots of human communication extend deep into evolutionary history. If, however, their behaviour can be explained through learned associations between observable cues and outcomes, then the emergence of mind-reading—and with it, language—marks a more radical discontinuity. Research on this question reveals a persistent tension between two approaches. Experimentalists emphasise methodological caution, seeking controlled evidence that cannot be reduced to simpler explanations. From this perspective, many behaviours that appear to demonstrate mind-reading can be reinterpreted as responses to patterns of behaviour rather than to underlying mental states. The principle of parsimony favours explanations that do not posit unobservable cognitive structures unless strictly necessary. Ethological approaches, by contrast, draw on observations of behaviour in natural settings, where the complexity of social interaction seems to demand richer explanations. In these contexts, the attribution of intentions often appears more plausible than intricate chains of stimulus-response associations. The debate between these positions reflects a deeper uncertainty about the nature of cognition itself: whether it should be explained in terms of internal representations or external regularities.

Empirical studies provide evidence that resists easy classification. Experiments in which chimpanzees respond differently to intentional teasing and accidental failure suggest a sensitivity to the distinction between deliberate and unintended actions. Such responses imply that the animals are not merely reacting to behaviour but interpreting it within a framework of intention. Yet alternative interpretations remain possible, and the evidence does not decisively resolve the question. Further studies indicate that some primates can track what others have seen or not seen, adjusting their behaviour accordingly. This capacity to use information about another's perceptual state introduces a new level of complexity into social interaction. It suggests that individuals can operate with representations that extend beyond their own immediate experience, incorporating the perspectives of others into their decision-making processes. Whether this constitutes full-fledged mind-reading or a more limited behavioural strategy remains contested. What is clear, however, is that primate cognition occupies an intermediate position, displaying elements that anticipate the capacities required for language without fully realising them. The gap between

human and non-human cognition may not lie in the presence or absence of representation, but in the degree of abstraction and flexibility with which it is deployed.

The emergence of language must therefore be situated within this broader context of social cognition. Communication depends not only on the ability to produce signals but on the expectation that those signals will be interpreted in good faith. This expectation presupposes a level of trust that is difficult to sustain in environments dominated by competition and deception. The evolution of communication is thus inseparable from the evolution of social structures that support cooperation. Early human groups likely developed forms of bonding that extended beyond immediate kinship, facilitated by imitation and shared practices. The capacity to mirror gestures and vocalisations created a basis for alignment, enabling individuals to coordinate behaviour and establish common ground. This alignment, reinforced over prolonged periods of dependency during development, fostered a social environment in which trust could be maintained. Within such environments, learned signals begin to replace innate ones. Flexibility becomes advantageous, allowing communication to adapt to changing conditions and new contexts. Groups that develop more effective systems of communication gain a competitive edge, not because they eliminate conflict, but because they manage it more efficiently. Coordination, information sharing, and collective action become possible at a scale that transforms the dynamics of survival.

The transition from proto-communication to language involves the gradual conventionalisation of signals. What begins as context-dependent expression becomes standardised through repeated use, creating shared codes that can be transmitted across individuals. Mechanisms such as cross-modal associations may facilitate this process, linking sounds, gestures, and perceptions in ways that stabilise meaning. These early conventions provide the scaffolding for more complex symbolic systems. Recent research, including computational modelling and experimental studies with human participants, demonstrates how such systems can emerge spontaneously within groups. Given the right conditions—shared goals, repeated interaction, and mutual dependence—individuals rapidly converge on common signals. These findings reinforce the view that language is not imposed from above but arises from the dynamics of social interaction. The co-evolution of cognition, communication, and social structure becomes evident within this framework. Each domain reinforces the others: improved cognitive capacities enable more sophisticated communication, which in turn supports more complex social organisation, creating new pressures for further cognitive development. Language is both a product and a driver of this process.

In this sense, the origins of meaning cannot be reduced to the invention of words or the development of syntax. They lie in the transformation of social relations, where trust becomes sufficiently stable to support shared systems of representation. Without this transformation, communication would remain limited to signalling systems constrained by immediate interests. The study of primates reveals both the proximity and the distance between human and non-human cognition. It shows that the building blocks of communication—perception, representation, and social awareness—are widely distributed, yet only in humans do they converge into a system capable of sustaining language. This convergence is not accidental but the result of specific evolutionary pathways shaped by ecological and social conditions. Language, therefore, emerges not from isolated innovation but from a reconfiguration of the social world. It requires minds capable of interpreting intentions and communities capable of sustaining trust. Only within such a framework can signals become meaningful in a shared and enduring way.

Hurford, J. R. (2014) The Origins of Meaning. Oxford: Oxford University Press.

The Private Image and the Public Word: The Threshold of Speech

James R. Hurford in ‘The Origins of Meaning’ concludes with a striking contrast between the richness of non-human cognition and the radical absence of its public expression, revealing that the decisive step toward language lies not in thought itself but in its externalisation. Apes possess structured mental representations that already anticipate key features of human propositional thought. Their cognition operates through predicate-argument configurations, where properties are assigned to objects within a perceptual field. Yet these structures remain fluid, not fixed to stable symbolic tokens, and are continuously reshaped by attention and context. Within this perceptual-cognitive system, apes demonstrate the ability to track multiple objects simultaneously, binding attributes to them in a dynamic representation of the environment. Their understanding unfolds across two levels: a global awareness of relational configurations and a local sensitivity to the properties of individual entities. Relations such as distance, dominance, or threat structure the scene as a whole, while invariant recognitions—such as identifying a predator—anchor perception in stable categories. This dual architecture suggests a mind already capable of organising experience in ways that resemble the logical scaffolding of language, yet without the symbolic permanence that language requires. These internal representations are not static images but processes shaped by selective attention, memory, and action. Apes can recall elements of past situations, anticipate outcomes, and perform limited forms of inference. Their cognition extends beyond immediate perception, revealing traces of episodic memory and the capacity to grasp elementary abstractions such as sameness or opposition. However, this abstraction remains bounded. More complex relational structures—relations between relations or properties of properties—rarely emerge without intensive human-mediated training. The cognitive horizon of apes thus appears as a threshold: sufficiently advanced to support structured thought, yet insufficient to generate fully recursive symbolic systems.

Crucially, these mental structures remain private. Unlike human language, which externalises thought into a shared medium, the representations of apes are confined to individual minds. Communication, where it occurs, is limited and largely tied to immediate contexts. Alarm calls, for instance, convey basic distinctions about predators, while gestures such as pointing appear only under specific conditions, often in interaction with humans. These acts suggest the possibility of reference but do not establish a stable system for sharing complex representations. The internal world of the ape, however structured, does not become a public world. The transition from private cognition to public language introduces a fundamental evolutionary puzzle. Human communication involves the voluntary sharing of information, often in ways that benefit others. From an evolutionary perspective, such behaviour appears counterintuitive. Information has value, and its disclosure can create vulnerability. The emergence of a system in which individuals routinely externalise their knowledge therefore requires explanation beyond individual advantage. Existing frameworks offer partial insights. Kin selection explains cooperation among related individuals, while reciprocal altruism accounts for exchanges sustained over repeated interactions. Sexual selection introduces the possibility that communicative ability serves as a display of cognitive fitness. Yet none of these mechanisms alone can account for the scale and complexity of human linguistic cooperation. The sharing of detailed, structured information across large groups suggests a deeper transformation in social organisation.

This transformation likely involved a convergence of social and cognitive conditions. More egalitarian group structures, reduced dominance hierarchies, and increased cooperation would have created an environment in which information sharing became less risky. Extended parental care and prolonged developmental periods allowed for the transmission of learned behaviours, while greater parity between sexes may have stabilised social relations. Within such contexts, trust

becomes a viable strategy rather than a liability. Central to this shift is the emergence of shared intentionality. Unlike other primates, humans exhibit a willingness to align their goals and perspectives with others, engaging in joint activities that require mutual understanding. Communication, in this sense, is not merely the transmission of signals but participation in a shared cognitive space. Language becomes possible when individuals not only represent the world but recognise that these representations can be coordinated and exchanged. The moment at which this coordination becomes habitual marks a decisive threshold. Once internal representations are externalised, communication initiates a cascade of transformations. Signals become conventionalised, structures emerge to organise expression, and the efficiency of transmission improves. Language begins to reshape cognition itself, enabling reflection on representations and facilitating higher levels of abstraction. What had been implicit in thought becomes explicit in communication.

This process can be described as a form of semantic ascent, where individuals move from engaging with objects and events to engaging with the representations of those objects and events. Language allows for the manipulation of meaning at a meta-level, opening the possibility of analysis, critique, and systematic thought. The emergence of phonological patterns and morphosyntactic structures further stabilises communication, creating systems that can be learned, transmitted, and expanded across generations. The evolution of language thus appears as a co-evolutionary process, where cognitive capacities and communicative systems mutually reinforce one another. As communication becomes more complex, it places new demands on cognition, which in turn enables further elaboration of language. This feedback loop drives the expansion of both domains, producing the intricate linguistic systems characteristic of human societies. What distinguishes this development from the cognitive capacities of apes is not the presence of structured thought, but its public articulation. The decisive innovation lies in transforming private representations into shared constructs. Language does not create thought, but it reorganises it, embedding it within a collective framework. Through this process, the individual mind becomes part of a larger network of meaning. The study of apes reveals that the building blocks of language—representation, memory, abstraction—are not uniquely human. What is unique is the integration of these capacities into a system that supports open, cooperative communication. The threshold of speech is therefore not a single invention but a reconfiguration of existing elements within a new social context.

Language emerges at the point where trust, cognition, and cooperation converge, enabling individuals to share not only signals but perspectives. It transforms the world from a collection of private experiences into a shared reality structured by meaning. In this transformation lies the origin of human communication, and the foundation upon which all subsequent linguistic complexity is built.

Hurford, J. R. (2014) The Origins of Meaning. Oxford: Oxford University Press.

The Economy of Surprise: Why Humans Speak at All

Jean-Louis Dessalles in ‘Why Humans Talk: An Evolutionary Perspective’ reframes language not as a neutral medium of information exchange, but as a system driven by the human compulsion to produce and share the unexpected. At the centre of this argument lies a paradox: if communication were merely about transmitting useful, predictable information, then human language would resemble the repetitive signalling systems of other animals. Instead, it operates as an open system, constantly generating novelty, resisting repetition, and privileging difference over redundancy. Human speech is structurally combinatorial, allowing an effectively infinite number of expressions

from a finite set of elements. Yet this structural openness is not simply a technical feature; it is matched by a behavioural tendency. Humans rarely repeat the same message in ordinary interaction. Each utterance is shaped as if originality were not incidental but required. In contrast to animal communication, where signals are fixed and tied to specific contexts, human language thrives on variation. The system is not designed to stabilise meaning but to continually reconfigure it. This constant production of novelty becomes more striking when one considers the sheer amount of time devoted to speaking. A significant proportion of human waking life is spent in verbal interaction, often without clear instrumental purpose. While explanations such as information exchange or social bonding offer partial insight, they fail to account for the qualitative nature of what is being communicated. Much of everyday speech does not convey essential survival information, nor does it merely reinforce social ties through repetition. Instead, it introduces variation, difference, and often trivial detail, suggesting that the function of language lies elsewhere.

That function becomes clearer when attention turns to storytelling. Narrative is not an optional or decorative aspect of language; it is one of its defining operations. Humans recount events, reconstruct experiences, and invent scenarios that extend beyond immediate perception. These narratives are not restricted to the present moment but traverse time, invoking the past, projecting into the future, or fabricating entirely fictional worlds. In doing so, language detaches itself from the constraints that govern animal communication, which remains tied to immediate stimuli and practical concerns. The effectiveness of storytelling, however, is not arbitrary. Narratives follow implicit rules that determine their value within social interaction. Central among these is the principle of rarity. A story becomes worth telling when it deviates from expectation, when it introduces something improbable, surprising, or anomalous. The mundane does not disappear, but it requires transformation—contextualisation or reinterpretation—to become narratively significant. This preference for the unexpected aligns with the logic of information itself, where the value of a message increases with its unpredictability. In this sense, language operates according to an economy of surprise. Speakers compete, implicitly or explicitly, to present information that captures attention by defying expectation. The act of speaking becomes less about transmitting stable knowledge and more about producing events within discourse—moments that interrupt the ordinary flow of experience. Communication is thus structured not by necessity but by deviation, not by repetition but by difference.

This orientation toward the unexpected distinguishes human communication from that of other species. While animals may react to novelty and signal the presence of unusual stimuli, they do not appear to share information simply because it is surprising. Their communication remains functionally tied to immediate needs. Humans, by contrast, cultivate surprise as a communicative value in itself. They report events not because they are useful, but because they are remarkable, thereby transforming language into a medium for the circulation of significance rather than mere utility. Such behaviour presupposes a shared framework of evaluation. For a narrative to be effective, both speaker and listener must recognise what counts as unusual or noteworthy. This shared sense of relevance creates a social field in which communication acquires meaning beyond the individual act. Language becomes a mechanism for negotiating what is important, constructing a collective sense of the world's structure through the continuous exchange of anomalies. The narrative impulse, therefore, cannot be reduced to a by-product of language. It reveals something fundamental about why language exists at all. The persistent production and sharing of stories—even trivial or fictional ones—suggests that communication serves a function that is neither purely practical nor purely social. It reflects a drive to externalise experience in a form that can be evaluated, compared, and integrated into a shared system of meaning. From an evolutionary

perspective, this raises a critical question. Why would a species invest so much time and cognitive energy in producing information that often lacks immediate utility? The answer lies in the transformation of communication into a social currency. The ability to generate and share relevant, surprising information enhances an individual's position within a group. It signals awareness, attentiveness, and cognitive engagement with the environment. Language, in this sense, becomes a medium through which individuals demonstrate their capacity to detect and interpret significant events.

This shift redefines communication as a competitive as well as cooperative activity. While information is shared, it is also evaluated, and the value of the speaker becomes tied to the quality of what is communicated. The production of narratives is thus not merely expressive but strategic, embedded in a social system where attention and credibility are at stake. The open-ended nature of language allows for continuous differentiation, enabling individuals to distinguish themselves through the originality and relevance of their speech. The implications for the evolution of language are profound. Rather than emerging solely as a tool for coordination or survival, language may have developed as a system for managing social attention and significance. Its combinatorial structure supports the endless production of new messages, while its narrative orientation ensures that these messages remain engaging. The result is a communicative system that prioritises novelty, fosters interaction, and sustains itself through the perpetual generation of difference. In this light, language appears not as an extension of animal signalling but as a qualitative transformation. It introduces a new dimension to communication, where meaning is not fixed but continuously negotiated through the exchange of narratives. The human tendency to speak—to fill time with words, to recount events, to invent stories—reflects not a redundancy but a fundamental feature of the system.

Speech persists because it creates a shared space in which the unexpected can be recognised and valued. It transforms isolated experiences into collective phenomena, binding individuals through the circulation of surprise. In doing so, it reveals that the origins of language lie not in the need to say something necessary, but in the compulsion to say something new.

Dessalles, J.-L. (2007) Why We Talk: The Evolutionary Origins of Language. Oxford: Oxford University Press.

The Babel Condition: Diversity as the Origin of Speech

Jean-Louis Dessalles in 'Why Humans Talk: The Evolutionary Origins of Language' approaches linguistic diversity not as a peripheral curiosity but as a central problem for any theory of language, forcing a reconsideration of whether language is primarily biological, cultural, or an unstable synthesis of both. The sheer multiplicity of languages, each internally coherent yet structurally distinct, resists any simple explanation. Languages are not designed systems imposed from above, nor are they random accumulations of signs. They emerge gradually, as communities stabilise shared conventions that allow communication to function, yet these conventions take radically different forms across human groups. This diversity introduces a fundamental tension. On one hand, the existence of universal features across languages suggests an underlying human capacity for language. On the other, the vast differences in phonology, syntax, and morphology challenge the idea that this capacity prescribes a fixed structure. If a biological faculty for language exists, it must be sufficiently abstract to generate both unity and variation. If language is purely a social construct, then the complexity and consistency found in all known languages becomes difficult to explain. The problem is not simply one of origin, but of form: why do all languages exhibit intricate

organisation, yet none converge into a single system? The proliferation of languages intensifies this question. If humans share the same cognitive architecture, why do they not converge linguistically? The answer lies in the arbitrariness of signs combined with the social nature of communication. Once a group stabilises a system of signs, that system becomes self-reinforcing. Differences accumulate not because they are necessary, but because communication depends on shared convention rather than universal transparency. Language is not optimised globally but locally, adapting to the history and interactions of specific communities.

The structural variation among languages reveals the depth of this divergence. Some languages rely on inflection, embedding grammatical relations within word forms, while others construct meaning through the accumulation of discrete elements. Phonological systems vary in their use of tone, harmony, or stress, creating distinct auditory landscapes. Syntax reorganises the order of thought, placing verbs before subjects or objects in ways that alter the rhythm and emphasis of expression. Even basic categories such as adjectives may be absent or distributed differently, challenging assumptions about the universality of conceptual divisions. Such variation does not imply disorder. Each language forms a coherent system, internally consistent and capable of expressing the full range of human experience. There are no primitive or incomplete languages, only different configurations of complexity. This universality of complexity suggests that language is not a fragile cultural artefact but a robust system shaped by both cognitive constraints and social dynamics. The search for a single ancestral language reflects an attempt to reconcile diversity with unity. Early observations of similarities among languages led to the hypothesis of a common origin, a linguistic ancestor from which others descended. While historical linguistics confirms genealogical relationships within language families, the idea of a single mother language becomes less convincing when extended globally. Language evolution resembles biological evolution in its branching patterns, gradual changes, and selective pressures, but it does not necessarily converge on a single origin point. Languages, like species, emerge, diverge, and sometimes disappear. They retain traces of their past, preserving archaic forms that no longer serve a clear function, much like vestigial organs in biology. These remnants testify to the historical depth of linguistic systems, revealing that language is not merely a tool but a record of cultural evolution. The persistence of irregularities and redundancies underscores the fact that languages are shaped by history as much as by logic.

The apparent correlation between linguistic and genetic patterns further complicates the picture. Populations that share linguistic features often exhibit genetic similarities, reflecting shared histories of migration and interaction. Yet this correlation does not imply a direct biological determination of language. Both language and genes are transmitted across generations, influenced by movement, isolation, and contact. Their alignment arises from common historical processes rather than causal dependence. This distinction is crucial. Language is not encoded in genes in the way physical traits are. What is inherited biologically is not a specific language but the capacity to acquire one. This capacity must therefore be understood as flexible, capable of accommodating a wide range of structures. The diversity of languages becomes evidence not of fragmentation but of adaptability, demonstrating that the human mind can sustain multiple, equally complex systems of representation. The idea of a universal language, whether as an original state or an ideal endpoint, collapses under this diversity. Languages do not converge toward a single form because their function is not to achieve global uniformity but to sustain local communication. Each linguistic system is embedded within a specific social context, shaped by the needs and practices of its speakers. The differences among languages reflect the multiplicity of human experiences rather than a failure to standardise. The origins of language must therefore be located not in a fixed structure but in a dynamic process. The emergence of language likely coincided with broader

cognitive and social transformations, where the capacity for representation intersected with the need for coordination and expression. This process did not produce a single system but a framework within which multiple systems could arise. Language is thus both universal and particular: universal in its capacity, particular in its realisations.

The diversity observed today is not an anomaly but a continuation of this process. It reflects the ongoing interaction between biological potential and cultural innovation. Languages evolve as communities evolve, adapting to new conditions while preserving traces of their past. This interplay ensures that language remains both stable and mutable, capable of sustaining continuity while accommodating change. In this sense, linguistic diversity is not a problem to be solved but a condition to be understood. It reveals that language is not a static entity but a living system, shaped by the histories of those who use it. The multiplicity of languages does not undermine the idea of a human capacity for language; it confirms it, demonstrating that this capacity is not bound to a single form but capable of generating an endless variety of expressions. Language emerges, therefore, not as a singular invention but as a distributed phenomenon, unfolding across different contexts and communities. Its origins are plural, its structures diverse, and its function inseparable from the social worlds it inhabits. In the proliferation of languages, one does not see fragmentation, but the full realisation of a capacity that defines the human condition.

Dessalles, J.-L. (2007) Why We Talk: The Evolutionary Origins of Language. Oxford: Oxford University Press.

The Illusion of the First Word: Culture Before and After Speech

Jean-Louis Dessalles in ‘Why Humans Talk: The Evolutionary Origins of Language’ interrogates the widely accepted belief that language stands as the singular catalyst of human cultural emergence, revealing instead a far more intricate relationship in which language and culture evolve in mutual tension rather than simple causation. The often-cited proposition that the birth of language coincides with the birth of culture captures an intuitive truth, yet risks transforming a correlation into an explanatory shortcut. If language indeed marks the threshold of culture, then one must account for the temporal and structural conditions under which such a transformation occurred. The archaeological record presents a compelling but ambiguous picture. The period commonly described as the Paleolithic Revolution introduces a sudden visibility of symbolic behaviour: cave paintings, ritual burials, and crafted artefacts of striking complexity. These developments appear without corresponding biological changes in *Homo sapiens*, suggesting that the transformation was not anatomical but cognitive or social. It is tempting, therefore, to attribute this shift to the emergence of language, as if speech unlocked a latent human potential, converting silent cognition into shared culture. Such an interpretation, however, raises a series of unresolved questions. If anatomically modern humans existed long before this apparent explosion of culture, why did the transformation occur when it did? The delay suggests that biological capacity alone is insufficient to explain the emergence of cultural complexity. Moreover, if language were the decisive factor, one would expect its effects to manifest immediately upon its appearance. The archaeological silence preceding the revolution implies either that language emerged gradually or that its presence alone does not guarantee cultural elaboration.

The hypothesis that language functions as a catalyst for cultural progress rests on its capacity to stabilise symbolic systems. Through language, humans can represent absent objects, coordinate action across time, and construct shared frameworks of meaning. These capabilities undoubtedly facilitate planning, cooperation, and the formation of social identities. Language provides the

medium through which distinctions between groups are articulated and maintained, enabling both cohesion and exclusion. It allows for the emergence of narratives that extend beyond immediate experience, embedding individuals within larger symbolic structures. Yet the sufficiency of language as an explanatory principle remains doubtful. Cultural revolutions in human history do not consistently align with linguistic innovation. The domestication of fire and the transition to agriculture represent profound transformations that occurred without any identifiable change in linguistic capacity. These examples indicate that cultural change can arise from shifts in environment, technology, or social organisation independently of language. The assumption that language alone generates culture risks overlooking the multiplicity of forces that shape human development. Cultural progress itself does not follow a linear trajectory. It is characterised by long periods of relative stability punctuated by bursts of innovation. Early human societies did not pursue systematic advancement; their inventions often emerged from chance, play, or immediate necessity. What appears retrospectively as a coherent progression is, in practice, a series of contingent developments. Innovations are rarely isolated; they trigger processes of imitation, competition, and refinement, leading to what can be described as self-catalysing elaboration. An initial discovery becomes the basis for further variation, generating complexity over time without requiring a central guiding principle.

Within this framework, the Paleolithic transformation appears less as a sudden rupture and more as the visible culmination of processes that had been unfolding over extended periods. Artistic and symbolic practices may have existed in less durable forms, leaving no trace in the archaeological record. The apparent suddenness of cultural emergence may thus reflect the limits of preservation rather than the abrupt invention of new capacities. Reconsidering the role of language within this process reveals a more modest but still essential function. Early forms of communication, even if lacking the full structure of modern language, may have been sufficient for transmitting practical knowledge. The ability to coordinate hunting, share resources, or signal danger does not require elaborate syntax or narrative complexity. Conversely, the emergence of art and spirituality may not depend directly on linguistic expression. Visual representation and ritual action can operate independently of verbal communication, suggesting that symbolic behaviour may precede or develop alongside language rather than being derived from it. The relationship between language and culture is further complicated by the uniform complexity of languages across societies. Observations that so-called simple or technologically limited societies possess highly intricate linguistic systems undermine the notion that language evolves in parallel with cultural sophistication. If language were purely a cultural artefact, one would expect its complexity to reflect the level of technological or social development. Instead, all known languages exhibit rich grammatical structures, regardless of the societies in which they are spoken.

This uniformity points toward an underlying biological foundation. The capacity for language appears to be a species-wide trait, not a variable cultural achievement. Culture shapes the specific forms that language takes, but it does not determine the existence of complex linguistic structure. The human mind seems predisposed to generate and sustain intricate systems of communication, even in the absence of advanced material culture. The interplay between biology and culture thus becomes central to understanding language. Biological evolution provides the cognitive architecture necessary for language, while cultural processes determine its expression and variation. Neither domain alone can account for the phenomena observed. Language is neither purely innate nor purely invented; it is the product of their interaction, a system that emerges where cognitive potential meets social practice. In this light, the search for a singular origin of language—whether biological or cultural—becomes misguided. Language does not appear as a discrete invention but as a gradual reorganisation of existing capacities. It is embedded within broader

transformations in human behaviour, including cooperation, symbolic thinking, and social organisation. Its role in cultural evolution is significant but not exclusive, contributing to processes that are themselves multifaceted and contingent. The idea that language created culture simplifies a relationship that is fundamentally reciprocal. Language enables certain forms of cultural expression, while culture shapes the conditions under which language develops and operates. The emergence of human society cannot be reduced to a single cause; it is the result of converging processes that reinforce and transform one another over time.

Understanding this dynamic requires abandoning the notion of a singular breakthrough in favour of a more complex narrative. Language participates in cultural evolution not as its origin but as one of its most powerful instruments, amplifying and stabilising changes that arise from multiple sources. It is both a product of human history and a force within it, shaping the ways in which individuals perceive, communicate, and organise their world.

Dessalles, J.-L. (2007) Why We Talk: The Evolutionary Origins of Language. Oxford: Oxford University Press.

Before Grammar: The Silence of Structure

Jean-Louis Dessalles in ‘Why Humans Talk: The Evolutionary Origins of Language’ engages with Derek Bickerton’s protolanguage hypothesis as a necessary conceptual bridge between non-linguistic cognition and the fully structured systems of modern speech, revealing a stage in which words existed without the architecture that now binds them. This intermediate form does not represent a deficiency but a distinct mode of communication, one that exposes the minimal conditions under which meaning can be shared before it is organised. Protolanguage operates through isolated lexical items, detached from the syntactic frameworks that later define human language. Communication in such a system depends not on grammatical relations but on juxtaposition. Words appear as fragments of meaning, assembled in sequence without explicit markers of dependency or hierarchy. This limits precision, slows interpretation, and introduces ambiguity, yet it does not render communication impossible. On the contrary, it demonstrates that language can function in a reduced state, relying on context and shared expectations to stabilise meaning. The persistence of this form becomes visible in contemporary situations where full linguistic competence is absent or unnecessary. In pidgin languages, created under conditions of forced contact between groups lacking a common tongue, communication emerges through simplified vocabularies and minimal structure. These systems prioritise semantic content over grammatical form, conveying essential information while omitting the connective tissue of syntax. Similarly, the early speech of children reveals a stage in which words are produced without systematic grammatical relations, forming utterances that resemble compressed propositions rather than sentences.

Cases of linguistic deprivation further illuminate this phenomenon. When individuals grow without exposure to structured language, their communicative output often approximates protolanguage, consisting of sequences of words that evoke situations without formally encoding relations between them. These instances suggest that protolanguage is not an artificial construct but a latent capacity within the human cognitive system, one that can emerge spontaneously when the conditions for full language acquisition are absent. This spontaneity challenges the assumption that language must be learned in its entirety. While modern language requires exposure during critical developmental periods, protolanguage appears to arise without such constraints. Observations of deaf communities, where children deprived of conventional linguistic input

develop shared systems of communication, indicate that the human mind tends toward the creation of symbolic systems even in the absence of formal models. When such systems are transmitted across generations, they rapidly acquire structure, transforming from rudimentary communication into fully developed languages. This transition reveals the underlying generative capacity of the human mind, which can move from lexical assemblage to syntactic organisation. The cognitive profile associated with protolanguage reflects its structural simplicity. Meaning is grounded in perception, tied to concrete objects and immediate situations. Words evoke images rather than abstract categories, and communication operates through the combination of these images into rudimentary scenes. The juxtaposition of terms produces an implicit narrative, but one that remains dependent on context for interpretation. Without grammatical markers, relations such as agency, possession, or temporality must be inferred rather than encoded.

This reliance on inference introduces both flexibility and limitation. On one hand, protolanguage allows for efficient communication by eliminating redundant elements, focusing on the core semantic components of a message. On the other, it restricts the range of expressible meanings. Abstract concepts, detached from perceptual grounding, remain inaccessible. Notions such as obligation, belief, or counterfactuality require a level of representation that protolanguage cannot sustain. Its domain is the immediate and the imaginable, not the conceptual and the recursive. Despite these limitations, protolanguage must be understood as a functional system. It is not a defective version of modern language but an adaptation to specific communicative needs. For early hominids, the ability to convey concrete information about the environment, coordinate action, and share basic experiences would have been sufficient for survival. The absence of syntax does not imply communicative failure; it indicates a different equilibrium between cognitive capacity and social necessity. Within this equilibrium, word order begins to assume a tentative role. Although lacking formal grammatical rules, sequences of words can suggest relations through their arrangement. The positioning of elements within an utterance provides cues for interpretation, allowing listeners to reconstruct the intended meaning. This emergent ordering represents the first step toward syntactic organisation, where patterns of use gradually solidify into conventions. The evolutionary significance of protolanguage lies in its position as a transitional system. It reduces the gap between non-human communication and human language, demonstrating that the leap to syntax need not be abrupt. Instead, language can be seen as an extension of existing capacities, reorganised into a more structured form. Protolanguage provides the substrate upon which more complex systems can develop, preserving continuity while enabling transformation.

Underlying this system is a form of meaning that can be described as protosemantic. It operates through association and imagery, constructing simple scenarios from discrete elements. This mode of representation aligns with the perceptual orientation of early cognition, where meaning is tied to experience rather than abstraction. The transition to full semantics involves the capacity to manipulate representations independently of immediate perception, introducing layers of complexity that extend beyond the protolinguistic stage. The movement from protosemantics to structured language marks a shift not only in communication but in cognition itself. As language acquires syntax, it enables the expression of relations that cannot be directly perceived, supporting the development of abstract thought. This transformation does not erase the earlier system but incorporates it, embedding protolanguage within the more elaborate structures of modern speech. The persistence of protolanguage-like forms in contemporary contexts suggests that this stage remains an integral part of the human communicative repertoire. It functions as a linguistic residue, a fossil within language that reveals its origins. In moments of simplification, urgency, or breakdown, speech reverts to this foundational mode, stripping away complexity to reveal the underlying mechanisms of meaning. The study of protolanguage thus reframes the evolution of

language as a process of gradual elaboration rather than sudden invention. It highlights the continuity between perception and expression, between individual cognition and shared communication. Language emerges not fully formed but through successive reorganisations, each building upon the capacities that precede it.

In this progression, the absence of grammar is not a void but a beginning. It marks the point at which words exist without structure, meaning without formal relation, communication without full articulation. From this threshold, the architecture of language unfolds, transforming isolated signs into a system capable of expressing the full complexity of human thought.

Dessalles, J.-L. (2007) Why We Talk: The Evolutionary Origins of Language. Oxford: Oxford University Press.

The Word Before Meaning: The Origins of Naming Without Structure

Jean-Louis Dessalles in 'Why Humans Talk: The Evolutionary Origins of Language' extends the evolutionary reconstruction of speech further back by engaging with Derek Bickerton and Ray Jackendoff's notion of prelanguage, a stage in which communication consisted not of sentences or even proto-sentences, but of isolated words suspended in context, revealing a form of meaning that precedes structure itself. This hypothetical system does not merely simplify language; it redefines it, stripping communication down to its most elementary condition: the act of naming without articulation. Prelanguage emerges as a transitional threshold between animal signalling and human linguistic capacity. Unlike the fixed calls of animals, which are rigidly bound to specific stimuli and emotional states, prelanguage introduces flexibility. A single word is no longer tied to a singular function but becomes a variable sign, capable of referring to multiple situations depending on context. The utterance of 'cat' is not a signal but an invocation. It does not encode a message; it opens a field of interpretation in which the listener must reconstruct intention from circumstance. This shift marks the birth of semantic ambiguity as a structural feature rather than a flaw. In prelanguage, meaning is not contained within the word itself but distributed across the interaction between speaker, listener, and environment. Communication becomes inferential. The hearer does not decode but interprets, drawing upon shared perception and situational awareness to stabilise meaning. The word functions less as a carrier of information than as a trigger for cognitive reconstruction.

Such a system presupposes a cognitive capacity that exceeds that of non-human animals yet falls short of full linguistic competence. It requires the ability to associate sounds with referents in a flexible manner, detaching the sign from immediate emotional expression and linking it to objects, actions, or events. At the same time, it lacks the capacity to combine these elements into structured representations. The mind can recognise and evoke, but not yet organise. Meaning exists, but it cannot be composed. This limitation defines the boundary of prelanguage. Without combinatorial structure, the system cannot reliably express relations between elements. It cannot specify who acts upon whom, what precedes what, or how events are connected. Each word stands alone, and the burden of coherence falls on context. Communication is therefore efficient only within shared perceptual environments, where visual cues and situational knowledge compensate for the absence of syntax. Despite its constraints, prelanguage must be understood as a functional adaptation. For early hominids such as *Homo habilis* or *Australopithecus*, the capacity to refer to objects or events through vocal signs would have represented a significant evolutionary advantage. It allows for a minimal form of coordination, directing attention and facilitating interaction without requiring

complex cognitive processing. In this sense, prelanguage is not an incomplete system but a locally optimal solution, aligned with the cognitive and ecological conditions of its users.

The evolutionary significance of prelanguage lies in the transformation it initiates. By introducing referential signs, it breaks the closed system of animal communication and establishes the foundation for symbolic thought. The rigid bond between signal and stimulus is loosened, replaced by a flexible relation that requires interpretation. This shift demands new cognitive operations, including the ability to map sounds onto mental representations and to infer meaning from partial information. Experimental evidence from studies of primates offers a parallel insight into this stage. Apes trained to associate words or symbols with objects can respond appropriately to verbal cues, retrieving items or performing actions. Yet their inability to combine these elements into structured sequences reveals the limits of their representational capacity. They operate within a presemantic or protosemantic domain, where meaning is present but not fully articulated. Prelanguage occupies a similar position, extending beyond animal communication but not yet reaching the threshold of syntax. The transition from prelanguage to protolanguage introduces the crucial innovation of combination. Where prelanguage presents isolated signs, protolanguage begins to assemble them, forming rudimentary sequences that evoke simple scenes. This shift does not eliminate ambiguity but redistributes it, allowing relations to emerge through juxtaposition. The movement from 'cat' to 'cat eat meat' marks a qualitative change, transforming reference into representation. The world is no longer merely indicated; it is depicted.

Prelanguage, in contrast, remains bound to immediacy. Its expressive power is limited by its inability to encode relations explicitly. The listener must supply the missing structure, reconstructing the intended meaning through inference. This dependence on context makes communication fragile but sufficient within small, tightly coordinated groups. It is a system that works precisely because it does not attempt to exceed its limits. Traces of this primordial stage persist within modern language, though in altered form. Interjections and single-word utterances retain the capacity to function independently, conveying meaning without syntactic support. Words such as 'yes', 'no', or 'hello' operate as complete communicative acts, demonstrating that language can still revert to its minimal state. Yet these remnants no longer carry the full cognitive weight of prelanguage; they exist within a system that provides structure when needed. The persistence of such forms suggests that prelanguage is not entirely superseded but integrated into the architecture of modern speech. It represents a foundational layer, a residue of an earlier stage that continues to operate beneath the surface of complex linguistic systems. In moments of urgency, simplicity, or breakdown, communication returns to this elemental form, revealing its enduring relevance.

Understanding prelanguage reframes the evolution of language as a gradual process of accumulation rather than a sudden invention. It highlights the continuity between animal signalling and human speech, showing that the emergence of language involves successive reorganisations of existing capacities. Each stage introduces new possibilities while retaining elements of what came before. In this progression, prelanguage marks the moment when sound becomes reference, when communication begins to detach from immediate reaction and move toward representation. It is the stage at which words exist without sentences, meaning without structure, and communication without full articulation. From this fragile beginning, the edifice of language is constructed, not by replacing the past but by building upon it.

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Against Silence: The Invention of Argument

Jean-Louis Dessalles in 'Why Humans Talk: The Evolutionary Origins of Language' identifies the emergence of argumentation as a decisive transformation in the function of language, marking the transition from the mere exchange of salient information to the structured resolution of cognitive conflict. This shift does not simply add a new layer to communication; it reorganises its purpose, turning language into a mechanism for confronting contradiction, negotiating meaning, and stabilising shared representations. The earliest communicative mode, inherited from protolanguage, operates through the transmission of noteworthy events. It is governed by relevance understood as salience: what is improbable, surprising, or emotionally charged becomes worth saying. This informative mode captures attention but does not demand resolution. It presents the world as a series of striking occurrences, leaving interpretation largely implicit. The emergence of argumentation introduces a different demand. Information is no longer sufficient; it must be explained, justified, or contested. This transformation becomes visible in the moment of astonishment. When an event appears to contradict expectation, it produces not only surprise but a rupture in understanding. The mind encounters an inconsistency that cannot be ignored. At this point, communication shifts from reporting to reasoning. Participants are compelled to supply explanations, not merely to maintain the flow of conversation but to restore coherence. Relevance is redefined: it is no longer determined by novelty but by the capacity to resolve the conflict that novelty produces.

This logical mode of conversation imposes new constraints on speakers. Contributions must address the inconsistency at hand; failure to do so disrupts the interaction and incurs a social cost. Language becomes accountable to reason. The exchange of utterances is no longer a sequence of isolated acts but a coordinated effort to reconcile competing representations. Communication acquires direction, guided by the necessity of explanation. Alongside this logical orientation emerges another dimension of argumentation, oriented toward action. In situations requiring decision, language functions as a tool for evaluating possibilities, weighing alternatives, and coordinating responses. The issue-settling mode transforms conversation into a space of negotiation, where problems are identified, solutions proposed, and consequences assessed. Each contribution enters into a dynamic interplay of proposal and critique, generating a sequence that moves toward resolution. This mode does not always culminate in action. In some cases, it remains at the level of evaluation, balancing advantages and disadvantages without producing a definitive outcome. Even here, however, the structure of argumentation persists. Statements are positioned in relation to one another, forming a network of reasons that shape collective understanding. Language becomes a medium for organising perspectives rather than merely expressing them. The coexistence of informative and argumentative modes reveals the layered nature of human communication. These modes are not mutually exclusive but sequentially or simultaneously activated. An event may first be presented as surprising, then examined for explanation, and finally assessed for its practical implications. This progression illustrates how language moves from perception to interpretation and from interpretation to decision, integrating multiple cognitive operations within a single communicative framework.

At the core of argumentation lies the concept of cognitive conflict. This conflict arises when incompatible representations coexist within the same cognitive space. It is not limited to abstract reasoning but emerges from everyday experience, where perception and expectation collide. The recognition of such conflict is itself a cognitive achievement, requiring the ability to hold and compare multiple representations simultaneously. The intensity of a cognitive conflict depends on

the strength of the representations involved. Some beliefs are deeply anchored in experience or context, while others are more tentative. Resolving a conflict involves evaluating these competing elements, identifying which is less stable, and modifying or rejecting it. This process is not purely deductive; it often relies on imaginative reconstruction, where alternative scenarios are proposed to account for the observed discrepancy. This form of reasoning, commonly described as abduction, operates by moving from effect to possible cause. It introduces a creative dimension into argumentation, allowing speakers to generate explanations that are not directly given in experience. Through this process, language becomes a tool for exploring possibilities, not merely describing realities. It enables the construction of hypothetical worlds in which contradictions can be resolved. Argumentation is inherently recursive. Each resolution may generate new conflicts, requiring further explanation or adjustment. This recursive structure produces the characteristic depth of human conversation, where exchanges extend beyond immediate concerns into chains of reasoning that evolve over time. The complexity of such interactions reflects the capacity of language to sustain extended sequences of thought, maintaining coherence across multiple turns.

This recursive dynamic distinguishes human communication from that of other species. While animals may respond to stimuli or signal specific states, there is no evidence of sustained exchanges aimed at resolving shared problems or contradictions. Human language, by contrast, creates a space in which thought itself becomes collective. Individuals do not merely express their own representations; they engage with those of others, constructing shared solutions through dialogue. The emergence of argumentation thus marks a fundamental shift in the role of language. It transforms communication from a system of signalling into a system of reasoning. Words no longer function solely as carriers of information but as instruments within a process of collective cognition. Through argumentation, language acquires the capacity to organise, challenge, and refine thought. This capacity has profound implications for social life. It enables the coordination of complex activities, the negotiation of norms, and the construction of shared realities. Decisions are no longer imposed or assumed; they are justified and contested. Language becomes the medium through which social order is continuously produced and reproduced. The birth of argumentation reveals that the evolution of language is not only a matter of increasing expressive power but of changing function. From the communication of salient events, it moves toward the resolution of conflicts and the construction of understanding. In this transition, language becomes inseparable from thought itself, not merely reflecting it but shaping its development.

What begins as the sharing of the unexpected culminates in the ability to confront contradiction. Language, in its most developed form, is not simply a means of saying something, but a means of deciding what can be said at all. It is in this capacity to argue—to engage in recursive, collective reasoning—that the full potential of human communication is realised.

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Reason Speaks: Logic as a Social Instinct

Jean-Louis Dessalles in ‘Why Humans Talk: The Evolutionary Origins of Language’ challenges the conventional hierarchy that places logic before language, proposing instead that reasoning itself may be an emergent property of communicative interaction, shaped not for solitary problem-solving but for the demands of social exchange. The ability to argue, to detect inconsistency, and to resolve contradiction is not an abstract intellectual luxury but a functional adaptation rooted in the structure of conversation. Human problem-solving reveals this distinction with particular

clarity when contrasted with the behaviour of other species. Non-human animals, even those with considerable cognitive sophistication, approach difficulties through repetition and gradual adjustment. A chimpanzee attempting to crack a nut does not formulate hypotheses about the physical conditions of success. It acts, fails, and tries again, its learning embedded in the accumulation of experience rather than the articulation of problems. There is no explicit recognition of contradiction between expectation and outcome, only a persistence of action. Human behaviour diverges at precisely this point. Faced with a mismatch between intention and result, humans do not merely repeat; they reinterpret. The problem becomes an object of thought. One identifies the conflict, imagines possible explanations, and rejects those that fail to account for the situation. This sequence—assessment, abduction, negation—forms the core of human reasoning. It transforms action into reflection, allowing individuals to reorganise their understanding before acting again.

What is striking is that this structure mirrors the organisation of conversation. Argumentative exchanges follow the same pattern: a claim encounters resistance, explanations are proposed, and incompatible elements are discarded. The parallel suggests that reasoning and communication are not separate faculties but expressions of a shared underlying mechanism. Thought itself may be modelled on dialogue, internalising the processes that occur between individuals. This observation destabilises the assumption that language derives from a pre-existing capacity for logic. If human reasoning were primarily designed for efficient problem-solving, one would expect it to outperform other systems in this domain. Yet artificial systems, engineered for optimisation, surpass human cognition in tasks requiring systematic evaluation of possibilities. Machines can explore multiple solutions simultaneously, applying formal logic without the constraints of attention or bias. Human reasoning, by contrast, is selective, context-dependent, and often inconsistent. Such limitations suggest that reasoning was not shaped for computational efficiency. Its strengths lie elsewhere. Human reasoning excels in contexts where relevance, persuasion, and interpretability matter more than exhaustive search. It is adapted to situations in which explanations must be communicated, evaluated, and accepted by others. Logic, in this sense, is not a tool for solving problems in isolation but for making solutions intelligible within a social framework.

From this perspective, argumentation becomes the origin rather than the consequence of reasoning. The need to justify claims, to respond to objections, and to maintain coherence within conversation drives the development of logical structures. Reasoning evolves as a means of sustaining communicative relevance, ensuring that contributions to discourse address the expectations and challenges posed by others. The capacity to detect contradiction is not merely cognitive but social, arising from the necessity of aligning representations within a group. Language plays a decisive role in this process by enabling the precise articulation of thought. Through linguistic expression, individuals can externalise their representations, making them available for scrutiny and modification. This externalisation creates a shared cognitive space in which ideas can be compared, contested, and refined. Unlike animals, whose representations remain largely private, humans can coordinate their understanding through explicit communication, transforming individual cognition into collective reasoning. The immediate function of language, therefore, extends beyond the transmission of information. It includes the communication of attitudes, intentions, and expectations that shape how information is interpreted. Conversational exchanges are governed by implicit rules of relevance that ensure alignment between participants. An utterance is not evaluated solely for its content but for its appropriateness within the context of interaction. A request implies an action, a statement invites a response, and meaning emerges from the interplay between what is said and what is expected.

This alignment between language and action illustrates the depth of their integration. Words do not merely describe situations; they participate in them. To say ‘it is cold’ is often to initiate a sequence of responses aimed at altering the environment. Communication becomes a form of coordination, linking thought and behaviour across individuals. The effectiveness of this coordination depends on the ability to anticipate and interpret the intentions of others, reinforcing the role of argumentation in maintaining coherence. The evolutionary emergence of this capacity reflects a transition from simple information sharing to complex social negotiation. Early communicative systems, oriented toward salient events, provided the foundation for interaction. With the development of argumentation, communication acquires a new dimension: the ability to resolve conflicts not only in the environment but in thought itself. This shift requires both linguistic and cognitive innovations, including the capacity to segment representations, identify incompatibilities, and construct explanations. Neurological developments, particularly in regions associated with executive function, likely supported this transformation. The expansion of cognitive resources enabled more sophisticated forms of reasoning, while the increasing complexity of social life created pressures that favoured individuals capable of navigating disagreement and uncertainty. Argumentation becomes an adaptive response to these pressures, facilitating cooperation by providing mechanisms for resolving disputes and establishing shared understanding.

The utility of logic, therefore, lies not in its abstract purity but in its social application. In environments where deception is possible, the ability to detect inconsistency becomes a defence. In contexts requiring cooperation, the capacity to justify actions and beliefs supports trust. Logic functions as a regulatory mechanism within communication, ensuring that interactions remain coherent and productive. This reorientation of logic from individual cognition to social practice reshapes the understanding of language itself. Language is not merely a vehicle for expressing pre-formed thoughts but a system that structures thought through interaction. It creates the conditions under which reasoning can occur, embedding cognitive processes within communicative exchanges. The emergence of argumentation thus represents more than an increase in communicative complexity. It marks the point at which language and thought become inseparable, each shaping and sustaining the other. Through this integration, humans develop the capacity to engage in collective reasoning, transforming communication into a space where ideas are not only shared but examined, challenged, and refined.

In this light, logic appears not as an abstract faculty imposed upon language, but as a product of its evolution. It is the residue of countless interactions in which meaning had to be defended, clarified, and negotiated. Reason speaks because language demanded it, and in speaking, it continues to shape the conditions of human understanding.

Dessalles, J.-L. (2007) Why We Talk: The Evolutionary Origins of Language. Oxford: Oxford University Press.

The Price of Saying Something: Speech as a Burden

Jean-Louis Dessalles in ‘Why Humans Talk: The Evolutionary Origins of Language’ overturns the intuitive image of the speaker as a figure of power, arguing instead that the act of speaking places one in a position of exposure, where attention must be earned and credibility continuously defended. Communication, far from being effortless, reveals itself as a costly undertaking—not in the physical act of signalling, but in the cognitive labour required to produce something worth hearing. Evolutionary theories of signalling illuminate the paradox. In many species,

communication evolves under conditions of manipulation and resistance. Signals emerge as attempts by senders to influence receivers, who in turn develop strategies to resist deception. This dynamic leads to the escalation of signals, which become exaggerated, repetitive, or energetically costly to ensure they remain convincing. The logic is clear: if a signal is difficult to produce, it is harder to fake, and therefore more reliable. Within this framework, costly displays function as guarantees of authenticity. The animal that risks energy or safety to produce a signal demonstrates a condition that weaker individuals cannot imitate. Reliability is secured through expense. Yet human language appears to violate this principle. Words are cheap. They can be produced with minimal effort and manipulated with ease. Deception becomes not only possible but trivial. If this is the case, why has language not evolved mechanisms that impose a similar cost, ensuring its reliability?

The answer lies not in the structure of speech itself but in the dynamics of interaction between speaker and listener. Human communication is regulated not by the cost of producing signals but by the scrutiny applied to them. Listeners are not passive recipients; they actively evaluate, reinterpret, and challenge what they hear. This evaluative capacity transforms language into a system where credibility must be established through relevance and coherence rather than through physical expenditure. Two mechanisms are central to this process. The first is the reduction of exaggeration through comparison. When confronted with a claim, listeners implicitly measure it against their existing knowledge, diminishing its impact if it appears trivial or implausible. This process prevents the inflation of significance, ensuring that only genuinely noteworthy information retains its value. The second mechanism involves the detection of inconsistency. Statements are examined for logical coherence, and contradictions are exposed through argumentation. In this way, language incorporates its own defence against deception, not through costliness but through critique. Within this system, the burden shifts decisively onto the speaker. The difficulty of communication lies not in producing words but in producing words that withstand evaluation. To speak effectively, one must possess information that is both relevant and defensible. This requires effort beyond the moment of utterance: observation, exploration, and the capacity to recognise what counts as significant within a shared cognitive framework. The cost of language is thus displaced from expression to acquisition.

This displacement reveals a deeper biological investment. Human beings exhibit a persistent drive toward curiosity, an inclination to seek out new and unexpected information. This behaviour is not without risk. Exploration consumes time and energy, and it often exposes individuals to danger. Yet it is precisely this willingness to incur cost that underpins the value of communication. Those who acquire relevant knowledge gain a form of social advantage, as their contributions become sought after and rewarded within the group. Language, in this sense, operates as a system of selective attention. Speakers compete not through volume or repetition but through the quality of what they present. To attract and maintain attention, one must offer information that meets the expectations of relevance imposed by listeners. The act of speaking becomes an act of demonstration, where one exhibits cognitive engagement with the world. The reward is not immediate survival but social recognition, influence, and inclusion. This dynamic becomes clearer when viewed across the stages of linguistic evolution. In its earliest form, prelanguage operates within immediate contexts, where signals can be directly verified. Communication is constrained by the environment, and deception is limited by the possibility of immediate testing. With the emergence of protolanguage, communication extends beyond the present, allowing speakers to describe events removed in time or space. Verification becomes deferred, introducing new opportunities for manipulation but also new demands for credibility.

The transition to fully developed language introduces a further layer of complexity. Syntax and thematic organisation enable the expression of abstract relations, while argumentation provides tools for evaluating claims. At this stage, the defence against deception is no longer external but internal to communication itself. Cognitive conflict detection and logical reasoning become integral to linguistic interaction, ensuring that statements are continuously subjected to scrutiny. Throughout these transformations, the function of language remains consistent: to draw attention to what matters. What changes is the mechanism by which relevance is secured. In early systems, it depends on direct perception; in later stages, on shared evaluation. The evolution of language can thus be understood as a progressive refinement of the conditions under which information becomes credible. The paradox of cheap signals is resolved by recognising that the cost of communication is hidden. It does not reside in the signal but in the system that surrounds it. Words may be easy to produce, but meaningful speech requires preparation, insight, and the ability to anticipate the judgments of others. The speaker must navigate a landscape of expectations, where failure to meet standards of relevance results in loss of attention and status.

This perspective reframes the relationship between language and truth. Reliability is not guaranteed by the structure of language but by the interaction of participants within it. Truth emerges as a by-product of a system designed to reward relevance and coherence. Deception remains possible, but it is constrained by the collective capacity to detect and challenge inconsistency. The speaker, therefore, does not dominate communication but depends on the listener. To speak is to risk irrelevance, to expose one's claims to evaluation, and to seek validation within a shared cognitive space. Language is not a tool of unilateral influence but a field of negotiation, where meaning is established through the interplay of assertion and critique. In this field, the true cost of communication becomes visible. It is the cost of knowing something worth saying, of aligning that knowledge with the expectations of others, and of sustaining its credibility under scrutiny. Speech is not cheap; it is sustained by the invisible labour of attention, cognition, and social engagement.

Dessalles, J.-L. (2007) Why We Talk: The Evolutionary Origins of Language. Oxford: Oxford University Press.

Speaking for Power: Conversation as Social Display

Jean-Louis Dessalles in 'Why Humans Talk: The Evolutionary Origins of Language' advances the provocative thesis that language is not primarily a neutral medium for transmitting information but a strategic instrument through which individuals display their value within coalitions, transforming everyday conversation into a subtle arena of competition, evaluation, and status negotiation. At the core of this view lies a simple but far-reaching premise: human groups organise themselves around criteria that predict collective success, and individuals who best embody these criteria acquire influence, privileges, and social centrality. Coalition life imposes a logic that makes status unavoidable. If a group depends on certain individuals for its effectiveness, those individuals cannot remain equal in influence to others without destabilising the system. High-value members, aware—implicitly or explicitly—of their importance, gravitate toward contexts where their contributions are recognised and rewarded. As a result, status hierarchies emerge not as arbitrary impositions but as functional responses to the dynamics of cooperation. The group must signal, to itself and to others, who matters most, and it does so by allocating attention, trust, and authority. Within this structure, conversational performance becomes a decisive criterion. The ability to produce relevant information—information that is timely, unexpected, and socially or biologically significant—serves as an indicator of cognitive engagement with the environment. A speaker who

consistently highlights what matters demonstrates not only observational acuity but also an implicit capacity to guide collective decisions. In this sense, relevance is not merely a conversational virtue; it is a proxy for leadership potential.

This reframing transforms language into a low-cost but highly effective medium of status display. Unlike physical feats such as courage or strength, which require direct risk and expenditure, speech allows individuals to exhibit competence through symbolic means. To say something interesting, to identify a hidden pattern, or to reveal an unexpected fact is to signal one's value without incurring immediate physical danger. Language thus becomes an economical mechanism for social differentiation, enabling constant, fine-grained evaluation within the group. Even the most mundane exchanges participate in this system. Remarks about the weather, casual observations, or minor anecdotes serve to maintain a baseline presence within the conversational field. They signal that the speaker remains engaged, attentive, and capable of contributing. At a higher level, more substantial interventions—insights, narratives, or arguments—can elevate an individual's standing, shaping how others perceive their intelligence, reliability, and relevance. Conversation, in this sense, is cumulative; each contribution adds to a continuously updated social profile. The comparison with advertising clarifies the specificity of human language. Both involve attempts to present oneself or one's message in a favourable light, yet the mechanisms differ fundamentally. Advertising relies on repetition and exaggeration to overcome resistance, often compensating for a lack of intrinsic relevance. Human conversation, by contrast, is constrained by the immediate evaluative capacities of listeners. Exaggeration is quickly neutralised, and irrelevance leads to dismissal. The speaker cannot simply assert value; it must be demonstrated within the shared framework of what counts as noteworthy.

These constraints are enforced through deeply ingrained cognitive and social mechanisms. Individuals instinctively assess the pertinence of what they hear, filtering out trivial or inconsistent statements. They question, reinterpret, and, when necessary, challenge. This reflexive engagement ensures that conversational space remains competitive and selective. Only contributions that meet implicit standards of relevance survive sustained attention, reinforcing the link between language and status. The biological grounding of these behaviours becomes evident in social environments where multiple voices compete simultaneously. The phenomenon often described as the 'cocktail-party effect' illustrates a persistent drive to be heard, to insert oneself into the flow of interaction. This is not merely a desire for expression but a manifestation of an underlying imperative: to remain visible within the network of potential alliances. Silence risks invisibility; speech secures presence. Beneath this constant exchange lies an ongoing process of evaluation. Participants are not only communicating but also assessing who is worth listening to, who provides reliable or valuable information, and who can be trusted as an ally. These judgments are rarely explicit, yet they shape the structure of social relations. Language becomes the medium through which these assessments are made, updated, and enacted.

From this perspective, the evolution of language reflects a deeper condition of human existence. Before becoming a speaking being, the human was already a political one, embedded in networks of cooperation and competition. Language emerges as the tool that allows these networks to function with greater complexity, providing a means to signal competence, negotiate influence, and stabilise hierarchies. It is not an accidental addition to social life but a central mechanism through which social life is organised. The broader cultural uses of language—poetry, mathematics, music—while significant in their own right, appear as extensions of this primary function. They exploit the structural capacities of language but do not define its evolutionary origin. Their existence demonstrates the flexibility of the system, not its initial purpose. The core

remains the same: the continuous demonstration of relevance within a social context. In this light, everyday conversation takes on a new meaning. It becomes a perpetual, largely unconscious campaign in which individuals seek to establish and maintain their position within the group. Each utterance is a small act of self-presentation, subject to immediate evaluation. Success enhances one's standing; failure—through irrelevance, inconsistency, or incomprehensibility—diminishes it. The stakes, though rarely acknowledged, are significant, influencing access to alliances, resources, and opportunities.

Language thus reveals itself as a mechanism of social selection. It filters individuals not through physical confrontation but through symbolic interaction, rewarding those who can navigate the demands of relevance and coherence. To speak is to enter this process, to expose oneself to judgment, and to attempt to demonstrate value within a shared cognitive space. The political dimension of language, in this sense, is not an external application but an intrinsic property. Communication is inseparable from the negotiation of status and alliance. Through speech, individuals position themselves within the social order, shaping and being shaped by the responses of others. What appears as the simple exchange of words is, in reality, the continuous construction of social reality itself.

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From Signal to Society: The Three Births of Language

Jean-Louis Dessalles in 'Why Humans Talk: The Evolutionary Origins of Language' concludes by assembling a coherent evolutionary narrative in which language emerges not as a sudden miracle nor as a gradual refinement of animal signalling, but as a sequence of distinct transformations driven by the pressures of social life, each stage introducing new capacities and new risks that required corresponding mechanisms of control. The origin of language, in this reconstruction, is neither mystical nor inevitable; it is contingent, shaped by the demands of coalition-building and the necessity of managing trust within increasingly complex groups. The first stage, prelanguage, belongs to a world where communication is tightly bound to the present. Early humans, already living in structured social groups, depended on cooperation for survival. Within these groups, individuals who could detect and highlight salient features of the environment—danger, opportunity, anomaly—became valuable. Their signals did not yet form a system in the full sense but consisted of isolated vocal or gestural units, each tied to an immediately observable reality. The strength of this system lay in its transparency: verification was direct, and deception was nearly impossible. What was signalled could be checked at once, and credibility was secured through the proximity of word and world. The transition to protolanguage marks a decisive break with immediacy. The capacity to combine mental representations allowed individuals to refer to events beyond the here and now—to recount what had happened, to anticipate what might occur, to describe scenes no longer present. This expansion dramatically increased the expressive power of communication, but it also introduced uncertainty. Once words detach from direct perception, the possibility of distortion emerges. Exaggeration, omission, and fabrication become conceivable. The system must therefore develop new forms of regulation. These take the form of cognitive strategies rather than structural constraints: listeners compare new information with prior experience, reducing its impact if it appears trivial, and they rely on deferred verification, exposing falsehoods through subsequent observation. Protolanguage thus occupies an intermediate space, richer than prelanguage yet still anchored in concrete, testable reality.

The emergence of fully developed language introduces a further layer of abstraction and control. At this stage, communication is no longer limited to scenes but extends to relations between elements within those scenes. The capacity for thematic segmentation—the division of experience into structured oppositions such as cause and effect or inside and outside—allows individuals to represent and manipulate complex ideas. This structural innovation enables the detection of cognitive conflict: inconsistencies within a statement or between statements can be identified and challenged. Argumentation arises as a natural consequence, providing a systematic method for resolving such conflicts. Syntax, in turn, offers the means to organise these thematic elements, supporting recursive elaboration and the construction of increasingly intricate representations. Language becomes not only a tool for describing the world but a system for testing the coherence of descriptions themselves. This three-stage genesis reveals language as a solution to a specific problem: how to maintain reliable communication in a context where direct verification is no longer possible. Each stage introduces greater expressive freedom while simultaneously requiring more sophisticated mechanisms of control. The trajectory is not one of linear improvement but of increasing tension between the potential for deception and the need for trust. Language succeeds because it integrates both sides of this tension, expanding what can be said while refining how it is evaluated. Such an account challenges traditional conceptions. The idea of language as a divine gift dissolves under the weight of its incremental development, while the view that it represents the natural culmination of animal communication fails to account for its qualitative discontinuities. Other species do not speak because they do not face the same social conditions. Language is not a universal endpoint but a specialised adaptation, emerging where the complexity of social interaction demands it. Even features often taken as hallmarks of intelligence—logical reasoning, argumentation, abstraction—appear here as contingent developments, tied to the specific evolutionary path of humans rather than to cognition in general.

This perspective opens the possibility that intelligence and communication need not take the same form elsewhere. If language arises from particular social pressures, then different conditions could produce entirely different systems. What appears essential from a human standpoint may in fact be local, shaped by the historical circumstances of a single species. Language, in this sense, is less a universal property of mind than a record of a particular evolutionary solution. The broader implications extend beyond the origins of speech to the interpretation of contemporary human behaviour. Practices often regarded as purely cultural—rituals, myths, symbolic systems—may reflect underlying biological dispositions formed in the same evolutionary context. The structures of modern society, despite their apparent novelty, remain anchored in patterns established in small-scale groups. Understanding language as a biological adaptation allows these continuities to become visible, revealing the persistence of ancient dynamics within modern forms. A striking illustration of this continuity appears in the development of digital communication. The internet, initially conceived as a medium for information exchange, rapidly evolved into a platform for self-presentation. Personal pages, social media profiles, and streams of content replicate the fundamental logic of language as described here: individuals compete for attention by offering information that others deem relevant. The medium changes, but the underlying behaviour remains constant. The same drive to demonstrate value, to attract recognition, and to secure position within a network reappears in new technological contexts.

Seen from this vantage point, language is neither a neutral conduit nor an isolated faculty. It is a social mechanism embedded in a broader system of evaluation and selection. Through it, individuals display their engagement with the world, test the claims of others, and negotiate their place within a collective. Its origins lie not in the need to describe reality for its own sake but in the need to navigate relationships within a group. The conclusion that follows is both modest and

far-reaching. Language is not an end in itself, nor the ultimate achievement of evolution. It is a means—an instrument shaped by specific conditions to solve specific problems. Its power lies in its ability to mediate between individual cognition and collective life, transforming private observations into shared knowledge while subjecting that knowledge to continuous scrutiny. To understand language, therefore, is to understand a fundamental aspect of human existence: the interplay between cooperation and competition, between trust and doubt, between expression and evaluation. It is within this interplay that language takes form, and it is here that its significance endures. What began as a way of pointing out what matters has become the primary medium through which humans construct, contest, and sustain their social world.

Dessalles, J.-L. (2007) Why We Talk: The Evolutionary Origins of Language. Oxford: Oxford University Press.

The First Fiction: Language and the Law of Symbols

Chris Knight in ‘Language, Ochre, and the Rule of Law’ from *The Cradle of Language* edited by Rudolf Botha and Chris Knight reorients the problem of language origins away from biology alone and toward the emergence of a symbolic order in which language appears not as a natural extension of animal signalling but as a collective fiction sustained by social trust and institutional agreement. The starting point of this argument lies in a classical philosophical insight articulated by Jean-Jacques Rousseau: the transition from nature to society marks a passage from instinct to justice, from immediate physical impulses to rule-governed behaviour. Language belongs to this second domain. It is not simply a mirror of internal thought, but a mechanism through which humans construct realities that have no direct counterpart in the physical world. In this sense, language does not merely describe the world; it creates a parallel domain of institutional facts—marriage, law, obligation, authority—which exist only because people collectively agree that they do. This perspective directly challenges the dominant biological paradigm associated with Noam Chomsky, in which language is treated as an innate computational system emerging from a sudden mutation in the human brain. The idea of a recursive operation such as ‘Merge’ offers a powerful formal explanation for the generative capacity of language, yet it leaves unresolved a deeper evolutionary question. How could a digital, rule-based system arise within an analog biological substrate governed by gradual Darwinian processes? The discontinuity between analog brains and digital language remains unexplained if language is reduced to a purely internal faculty.

Knight reverses this perspective. Instead of imagining digital minds appearing within an analog world, he suggests that humans are fundamentally analog beings who have constructed a digital cultural environment. This digitality is not located in the brain alone but in the shared symbolic systems that structure human interaction. Language, in this view, is not a private computational mechanism but a public institution, sustained through collective agreement and mutual recognition. The distinction between brute facts and institutional facts becomes crucial. Brute facts exist independently of human interpretation: physical objects, biological processes, natural events. Institutional facts, by contrast, depend entirely on shared belief. A piece of paper becomes money only because a community agrees to treat it as such; a promise becomes binding only because it is recognised within a normative framework. Language operates within this second domain. Words are not tied directly to the physical world but derive their meaning from systems of convention that must be collectively maintained. This raises a fundamental evolutionary problem. In a Darwinian environment dominated by competition and self-interest, communication systems tend to rely on costly, reliable signals that cannot easily be faked. Animal communication follows this logic. Signals are typically grounded in physical states—strength, fear, readiness to attack—and

their reliability is ensured by the cost of producing them. Symbolic communication, by contrast, is inherently cheap and therefore vulnerable to deception. Words can be produced effortlessly, detached from immediate reality, and used strategically.

The emergence of language therefore presupposes a solution to what can be described as a trust dilemma. For symbolic communication to function, participants must accept that words, despite their low cost, can be relied upon. This acceptance cannot be guaranteed by biology alone; it requires a social framework in which rules, norms, and sanctions stabilise meaning. Language is thus inseparable from the emergence of what can be called the rule of law: a system in which behaviour is regulated not by immediate physical consequences but by collectively enforced norms. The digital nature of language reflects this institutional grounding. Unlike the continuous, graded signals of animal communication, human language operates through discrete distinctions. Phonemes are categorically different rather than gradually varying; grammatical rules impose binary structures—correct or incorrect, permissible or impermissible. This discreteness is not a natural property of sound or cognition but a product of convention. It exists because communities agree to treat certain distinctions as meaningful and enforce them through social practice. The origins of such conventions are unlikely to be found in utilitarian communication alone. Knight points instead to the role of play. In play, individuals temporarily suspend the constraints of reality, engaging in shared fictions that depend on mutual trust. A game exists only as long as its participants agree to follow its rules; its objects and actions acquire meaning within a symbolic framework that has no independent existence. Play thus provides a model for how symbolic systems can emerge: through collective participation in structured, rule-governed activities that are initially detached from immediate survival concerns.

In human evolution, play may have provided the foundation for more elaborate symbolic practices, including ritual. Ritual extends the logic of play into the domain of social organisation, embedding shared meanings in repeated, formalised actions. Through ritual, communities create stable frameworks of expectation and trust, enabling the emergence of symbolic communication that can operate independently of immediate physical signals. Within this context, the transition to speech as a dominant mode of communication can be understood as a shift toward zero-cost signalling. Speech allows for rapid, flexible, and efficient exchange of information, but its reliability depends entirely on the existence of institutional guarantees. Words function as what might be called ‘honest fakes’: they have no intrinsic connection to their referents, yet they are treated as meaningful because they are embedded in a system of shared rules and expectations. The archaeological record offers suggestive evidence for the emergence of such symbolic systems. The use of red ochre in early human societies, for example, points to the existence of shared symbolic meanings that transcend immediate practical function. Ochre, often associated with blood, fertility, and life, appears to have played a role in ritual practices that reinforced social cohesion and collective identity. Its significance lies not in its physical properties but in the meanings attributed to it within a cultural framework.

Menstruation, as a visible and cyclical marker of fertility, may have provided a natural anchor for the development of such symbolic practices. In many hunter-gatherer societies, menstrual taboos and rituals structure social relations, regulating access to sexual partners and reducing conflict. These practices transform a biological fact into a cultural institution, embedding it within a system of norms and meanings that extend beyond its immediate physical significance. The ‘Female Cosmetic Coalitions’ model builds on this insight by suggesting that early human females may have used symbolic practices, including the application of ochre, to coordinate collective action and resist male dominance. By synchronising reproductive cycles and establishing shared rituals,

these coalitions could impose constraints on male behaviour, creating the conditions for more egalitarian social structures. In this context, symbolic communication becomes a tool for social regulation, enabling the emergence of cooperative systems that depend on shared norms rather than brute force.

Language, within this framework, is not an isolated invention but part of a broader transformation in human social organisation. It emerges alongside the development of symbolic kinship systems, ritual practices, and institutional norms that together constitute a new mode of existence. Humans become beings who live not only in the physical world but in a world of meanings, obligations, and shared fictions. The implications for theories of language evolution are profound. Any adequate account must integrate biological, cognitive, and social dimensions, recognising that language cannot be reduced to any single factor. The ‘deep social mind’ paradigm proposed by Knight offers such an integration, emphasising the co-evolution of symbolic culture and human cognition. Language is both a product and a driver of this process, shaping and being shaped by the social structures in which it is embedded. In this light, language appears not as a natural extension of animal communication but as a qualitative rupture—a transition from analog signalling to digital symbolism, from immediate expression to mediated meaning. It is a collective invention that depends on trust, cooperation, and the willingness to participate in shared fictions. The rule of law, in its most fundamental sense, is not a later development imposed on language but a condition of its possibility.

The cradle of language, therefore, is not located solely in the brain or the vocal tract but in the social practices that make symbolic communication viable. It is in the emergence of shared norms, rituals, and institutions that language finds its ground. Humans do not simply evolve the capacity to speak; they create a world in which speech can have meaning.

Knight, C. (2009) ‘Language, Ochre, and the Rule of Law’, in Botha, R. and Knight, C. (eds.) The Cradle of Language. Oxford: Oxford University Press.

From Words to Worlds: The Slow Architecture of Grammar

Robbins Burling in *The Talking Ape: How Language Evolved* reconstructs the emergence of grammar not as a sudden invention but as a gradual accumulation of small, functional steps through which isolated words became structured systems, revealing language as a product of continuous transformation shaped by usage, cognition, and interaction rather than by abrupt mutation. The central difficulty in explaining syntax lies in the long-standing assumption that it must be complete to exist at all. Traditional linguistic theory has often treated syntax as an all-or-nothing system, incapable of partial forms. Yet such a position renders its evolution almost miraculous. Burling, drawing on the work of Ray Jackendoff, proposes instead that syntax emerged through intermediate stages, each of which was both functional and adaptive in its own context. These stages cannot be directly observed, but they can be inferred through two complementary lines of evidence: the functional independence of syntactic features and the historical process of grammaticalization, which demonstrates how languages transform over time. Grammar begins not with rules but with words. Before syntax could organise relationships, there had to be a sufficient stock of lexical items to make such organisation meaningful. Early language likely consisted of isolated utterances—single words tied to immediate contexts. These words, however, did not remain isolated for long. The pressure to express more complex relationships led to their juxtaposition, creating rudimentary associations. The simple pairing of words such as ‘rock’ and ‘hot’ could already imply a relation, even in the absence of formal grammar.

At this stage, prosody—intonation, rhythm, and stress—played a decisive role. Without fixed syntactic markers, speakers relied on vocal modulation to signal relationships between words. Rising and falling tones, emphasis on particular elements, and rhythmic grouping allowed listeners to infer meaning from sequences that lacked explicit structure. Language here is not yet a system of rules but a dynamic interplay between sound and interpretation. From these beginnings, word order emerged as a stabilising principle. Certain sequences proved more intuitive than others, often reflecting the temporal or causal structure of events. Expressions like ‘come, look, kangaroo’ mirror the order of perception, while ‘Bill pushed Tom’ reflects an agent acting upon a patient. These patterns, initially grounded in iconic representation, gradually solidified into conventions. Word order became a means of encoding relationships, reducing ambiguity and increasing efficiency.

The transition from linear sequences to hierarchical structures marks a critical threshold in the evolution of syntax. Words began to cluster into phrases, forming units that could function as single elements within larger constructions. The word ‘dog’ could expand into ‘the shaggy little black and white dog’, and further into complex expressions containing relative clauses. This capacity for embedding—recursion—allowed language to transcend finite limits, generating an infinite range of meanings from a finite set of elements. Recursion did not appear fully formed. Early speakers likely used prosodic cues to mark boundaries between units, gradually refining these patterns as listeners became more adept at recognising them. Over time, these implicit cues were internalised as structural principles, giving rise to the hierarchical organisation characteristic of modern syntax. What begins as a matter of performance becomes a matter of competence. As phrases grew more complex, the need to clarify relationships between them led to the emergence of function words. Unlike content words, which refer to objects, actions, or qualities, function words serve to organise and connect. Terms such as ‘and’, ‘because’, or ‘next to’ do not carry concrete meaning but indicate how elements relate to one another. These words often originate in more concrete expressions that gradually lose their specificity. A term like ‘back’ can shift from denoting a physical location to marking spatial or temporal relations, illustrating how abstraction emerges from repeated use.

This process of grammaticalization reveals language as a system in constant motion. Words and phrases are compressed, fused, and transformed into grammatical markers. Contractions such as ‘I’d’ve’ or the reduction of ‘going to’ to ‘gonna’ exemplify the tendency toward efficiency. Over longer periods, these changes produce more profound transformations, as seen in the evolution from Latin to the Romance languages or from Old English to its modern form. Grammaticalization follows a cyclical pattern: compaction creates ambiguity, which in turn necessitates innovation, leading to new forms that eventually undergo the same process. Parallel to this development is the emergence of grammatical classes. Content words begin to differentiate into categories such as nouns, verbs, and adjectives, while function words establish patterns that reinforce these distinctions. Consistent word order further stabilises these categories, creating expectations that guide both production and interpretation. Language thus becomes increasingly structured, not through design but through the accumulation of habitual patterns. At the semantic level, early expressions are organised around roles such as agent, patient, and instrument. A sentence like ‘Mary smashed the glass with the hammer’ directly reflects these roles. As syntax evolves, however, grammatical functions such as subject and object begin to diverge from their semantic origins. The structure of the sentence becomes partially autonomous, governed by rules that do not always align with intuitive meaning. This shift marks the transition from a language grounded in direct representation to one governed by formal relations.

Morphological complexity arises through compounding and affixation. Independent words combine into larger units—‘blackboard’, ‘breakfast’—while frequently used elements are reduced and attached as prefixes or suffixes. Over time, these affixes themselves may erode, simplifying the system while preserving its functional core. The history of English, with its gradual loss of inflectional endings, illustrates how languages balance complexity and economy. Underlying these developments are multiple evolutionary forces. Random variation introduces new forms, some of which persist while others disappear. Grammaticalization drives the compression and restructuring of language, increasing efficiency. Linguistic selection, operating through the preferences of children, favours patterns that are easier to learn and process. At a deeper level, natural and sexual selection may have shaped the cognitive capacities that support language, favouring individuals who can navigate increasingly complex communicative systems.

The evolution of syntax can thus be imagined as a sequence of overlapping stages. Initial word pairings give way to stable word orders, which in turn support the formation of phrases. Recursion enables the expansion of these structures, while function words and grammatical markers refine and stabilise relationships. Each stage builds upon the previous one, creating a system that appears unified but is in fact the product of layered historical processes. What emerges from this account is a vision of language as an adaptive system shaped by interaction rather than by design. Speakers and listeners co-construct the structures they use, responding to pressures of clarity, efficiency, and expressiveness. Grammar is not imposed from above but emerges from below, through countless acts of communication that gradually sediment into convention.

The talking ape does not acquire language in a single leap but constructs it step by step, transforming simple signals into complex systems. Syntax, far from being an inexplicable anomaly, becomes intelligible as the cumulative outcome of processes that remain active in language today. Every utterance participates in this ongoing evolution, contributing to a system that is never complete, always in motion, and perpetually shaped by the interplay between human minds and the words they share.

Burling, R. (2005) The Talking Ape: How Language Evolved. Oxford: Oxford University Press.

The Theatre of Speech: Power, Desire, and the Social Engine of Language

Robbins Burling in *The Talking Ape: How Language Evolved* challenges the utilitarian myth of language origins by arguing that the complexity of human speech cannot be reduced to survival needs but must be understood as the product of social competition, gossip, and sexual selection, where language functions less as a tool of subsistence and more as an arena of performance, persuasion, and desire. The traditional explanation of language evolution rests on a seemingly intuitive premise: early humans needed to communicate in order to survive. Coordination during hunting, sharing information about food sources, and transmitting practical knowledge are often cited as the primary drivers of linguistic development. Yet this explanation collapses under closer scrutiny. The extraordinary richness of human language—its vast vocabularies, intricate syntax, and capacity for abstraction—far exceeds what would be required for such basic tasks. Survival does not demand poetry, metaphor, or recursive grammar. Even complex cooperative activities can be managed with minimal communication, as evidenced by animal species that coordinate effectively without anything resembling human language. This discrepancy reveals a deeper problem. If early humans could have survived with far simpler communicative systems, then the evolution of language must have been driven by forces beyond mere utility. Burling locates these forces in the social environment of early human communities, where communication became a

central mechanism for navigating relationships, asserting dominance, and attracting mates. Language, in this sense, is not an adaptation for survival alone but a product of the pressures generated by living in complex social groups.

By the Upper Paleolithic, roughly 35,000 years ago, humans already possessed the anatomical and cognitive capacities necessary for modern language. Yet these capacities emerged in societies that were technologically simple, where hunting and gathering constituted the primary means of subsistence. The contrast between the simplicity of material life and the complexity of linguistic capacity suggests that language evolved for purposes that extend beyond immediate practical needs. Teaching a skill, for example, often requires demonstration rather than verbal instruction, and many traditional societies rely heavily on observation and imitation rather than explicit explanation. The true domain of language, Burling suggests, is social rather than practical. Human intelligence evolved to manage relationships within groups, and language became the primary medium through which this management occurred. In small-scale societies, where individuals depend on one another for survival, the ability to communicate effectively confers significant advantages. Language allows individuals to form alliances, negotiate conflicts, and establish their place within the social hierarchy. Leadership provides a clear illustration of this dynamic. In many traditional societies, those who rise to positions of influence are often distinguished by their verbal abilities. Persuasion, eloquence, and rhetorical skill enable individuals to mobilise others, shape collective decisions, and maintain authority. Ethnographic accounts consistently highlight the importance of oratory in leadership, from the highlands of Papua New Guinea to the pastoral communities of East Africa. The capacity to speak well is not merely an ornament but a source of power, with direct consequences for social standing and reproductive success.

Equally central to the social function of language is gossip. Far from being trivial, gossip constitutes a substantial portion of human conversation and serves as a vital mechanism for maintaining social networks. Through the exchange of information about others—who is trustworthy, who has violated norms, who is allied with whom—individuals navigate the complexities of social life. Gossip reinforces bonds, disseminates reputational information, and enables individuals to position themselves strategically within their communities. It is a form of social surveillance, sustained through continuous verbal interaction. The significance of gossip points to a broader principle: language is not primarily about the external world but about the social world. Humans talk less about objects and more about people, relationships, and events that carry social meaning. Conversation becomes a space in which individuals perform their identities, display their knowledge, and compete for attention. The rules of conversation—turn-taking, relevance, responsiveness—are subtle yet demanding, requiring participants to demonstrate competence and awareness. Success in this domain translates into social capital, while failure risks marginalisation. Sexual selection introduces another layer of complexity. Traits that are costly, elaborate, and seemingly unnecessary for survival often evolve because they function as signals of fitness. Geoffrey Miller's analogy between language and the peacock's tail captures this dynamic. Just as the peacock's extravagant plumage signals genetic quality despite its survival costs, linguistic abilities such as storytelling, humour, and verbal creativity may serve as indicators of intelligence and health. These traits are difficult to fake and therefore reliable as signals in mate selection.

Language, in this context, becomes a medium of seduction. The ability to tell engaging stories, produce witty remarks, or compose expressive speech enhances an individual's attractiveness. Courtship is not merely a biological process but a communicative one, in which language plays a central role. Unlike many other species, humans engage in mutual mate selection, meaning that

both sexes evaluate potential partners. This mutuality ensures that linguistic abilities develop broadly across the population, reinforcing their importance in social and reproductive life. For such processes to operate, there must be variation in linguistic ability. Not all individuals speak equally well, and these differences have consequences. Skilled speakers—those who excel in argument, narration, or humour—are more likely to gain influence and attract partners. Over generations, these advantages can shape the evolution of language itself, favouring increased complexity and flexibility. Linguistic skill becomes both a product of evolution and a force that drives it. Conversation, as the primary arena of linguistic interaction, encapsulates these dynamics. It is not a neutral exchange of information but a competitive and cooperative activity in which participants seek to be engaging, relevant, and persuasive. The impulse to share information, even when it may not confer immediate advantage, can be understood as a strategy for gaining attention and enhancing reputation. Speaking becomes a form of display, through which individuals signal their cognitive and social capacities.

The result is a system that far exceeds the requirements of subsistence. Language evolves into a rich, expressive medium capable of conveying not only practical information but also emotions, intentions, and abstract ideas. This expansion is not accidental but reflects the cumulative effects of social and sexual selection, which favour individuals who can use language effectively in a wide range of contexts. At the same time, the development of complex language creates new possibilities for human culture. Once established, linguistic systems enable forms of thought and organisation that would otherwise be impossible. Abstract reasoning, long-term planning, and the transmission of knowledge across generations all depend on the capacities that language provides. What begins as a tool for navigating social relationships becomes the foundation for civilisation itself. Yet the origins of this system remain rooted in the dynamics of small-scale societies. Language does not emerge from the need to describe the world but from the need to negotiate it socially. It is shaped by the pressures of competition, the demands of cooperation, and the desires of individuals seeking recognition and connection. Its complexity reflects not the simplicity of survival tasks but the intricacy of human relationships.

In this light, language appears as a fundamentally social phenomenon. Its structures are not merely logical or biological but deeply embedded in the practices through which humans interact. Grammar, vocabulary, and syntax are the visible traces of processes that unfold in conversation, where meaning is continuously constructed and contested. The talking ape is not simply an organism that communicates; it is a being that performs, persuades, and desires through words. The evolution of language, therefore, cannot be understood without recognising the central role of social life. Power, gossip, and seduction are not peripheral aspects of communication but its driving forces. They transform language from a utilitarian tool into a complex system of expression, capable of shaping both individual destinies and collective realities.

Burling, R. (2005) The Talking Ape: How Language Evolved. Oxford: Oxford University Press.

The Burden of Words: How Language Remade the Human Animal

Robbins Burling in *The Talking Ape: How Language Evolved* concludes by shifting the question from how language emerged to what it has done to us, arguing that language has not merely enhanced human life but fundamentally reconfigured cognition, social organisation, and the very structure of reality within which humans exist, transforming a primate species into a linguistic one whose existence is inseparable from words. The uniqueness of humans does not lie simply in anatomy or intelligence but in the pervasive influence of language across all domains of life. While

evolutionary explanations attempt to reconstruct the pathways through which language arose, its consequences are more visible and immediate. Compared to other species, humans inhabit a world saturated with speech, where nearly every action is mediated by words. Language is not an accessory to human life; it is its organising principle. The most immediate transformation brought about by language is social. Human interaction is not merely coordinated through signals but structured through an elaborate system of verbal acts. The sheer range of communicative intentions—accusing, advising, flattering, deceiving, negotiating—reveals that speech is not limited to transmitting information but constitutes a repertoire of social actions. Words do not simply describe relationships; they enact them. Through language, alliances are formed, hierarchies established, and identities negotiated.

This social dimension is reflected in the richness of vocabulary across cultures. Even in societies with relatively simple material conditions, linguistic systems display remarkable complexity, particularly in the domain of social relations. The example of the Garo community illustrates this clearly. Their technological simplicity contrasts with a highly nuanced language capable of expressing fine distinctions in interpersonal dynamics. This suggests that linguistic complexity correlates less with technological advancement than with the demands of social life. Where relationships are intricate, language must be equally so. Language enables humans to map the social world with precision. Categories such as age, gender, status, and kinship are encoded in speech, shaping how individuals address one another and interpret interactions. The ability to articulate kinship relations, extending beyond immediate family to distant relatives or even hypothetical descendants, represents a significant departure from other species. While many animals recognise kin, only humans can conceptualise and communicate complex genealogies, thereby extending social networks far beyond immediate perception. At the same time, language intensifies competition. It provides tools for persuasion, manipulation, and strategic communication, allowing individuals to influence others without direct physical confrontation. Power is often exercised through speech, whether in the form of argument, rhetoric, or narrative control. Language thus becomes a medium through which social hierarchies are both contested and maintained. It refines competition, making it more subtle but no less consequential.

One of the most profound effects of language is its role in managing violence. Humans are not necessarily less violent than other species, but language transforms how violence is expressed and controlled. Through negotiation, threats, and promises, conflict can be delayed or avoided. At the same time, language enables the organisation of collective violence on a scale unmatched in the animal kingdom. It allows individuals to coordinate actions, justify aggression, and mobilise groups, turning isolated acts into structured campaigns. Language is therefore both a restraint on violence and a means of amplifying it. Beyond its social effects, language reshapes cognition. It provides tools for categorisation and memory, allowing humans to organise experience in ways that would otherwise be impossible. Naming an object or concept stabilises it in memory, making it accessible for reflection and communication. Words function as cognitive anchors, enabling individuals to manipulate abstract ideas and engage in complex reasoning. The absence of language reveals its cognitive significance. Individuals without access to fully developed linguistic systems can perform practical tasks effectively, yet they often struggle with abstraction. Without words to structure thought, concepts such as justice, kinship, or belief remain diffuse and difficult to articulate. Language extends cognition beyond the immediate and tangible, enabling humans to imagine possibilities, construct hypothetical scenarios, and reflect on their own experiences.

Yet this cognitive power carries a paradox. Language does not merely clarify; it also distorts. By assigning names to abstract entities, humans create the illusion of stable, concrete realities where

none exist. Concepts such as truth, justice, or divinity acquire a semblance of objectivity through linguistic representation, even though their meanings remain contested and fluid. Words compress complexity into manageable forms, but in doing so they risk oversimplification and reification. Language thus becomes a source of both understanding and illusion. The development of writing intensifies these effects. Although a relatively recent innovation, writing builds upon the capacities of spoken language to extend communication across time and space. It enables the accumulation of knowledge, the establishment of legal systems, and the coordination of large-scale societies. Writing transforms language into a durable medium, allowing ideas to persist beyond the immediate context of speech. In doing so, it lays the foundation for institutions such as science, law, and bureaucracy. Language is also unique in its dual nature as both shared and learned. Unlike instinctive behaviours that are uniform across a species, language varies across communities and is acquired through social interaction. This combination of universality and variability fosters cultural diversity while maintaining a common structural foundation. Through language, not only linguistic systems but entire cultural traditions—beliefs, practices, technologies—are transmitted across generations.

This capacity for transmission underlies the emergence of theoretical thinking. Humans use language to construct models of the world, whether in the form of scientific theories or religious doctrines. These models differ in their methods and standards of validation, yet both rely on linguistic representation. The ability to formulate and communicate abstract ideas is inseparable from the existence of language. Even in childhood, this capacity is evident. Children learning language do not passively absorb patterns but actively generate hypotheses about grammatical structure, testing and revising them based on input. This process mirrors the broader human tendency to theorise, suggesting that the cognitive mechanisms underlying language acquisition are closely linked to those that support abstract reasoning more generally. The result of these transformations is a species fundamentally altered by its own communicative system. Humans do not simply use language; they inhabit it. Social life, cognition, and culture are all mediated through words, creating a reality that is both constructed and maintained through linguistic interaction. The world humans experience is not merely given but interpreted, organised, and reshaped through language. The example of the Garo community offers a final illustration. Despite limited technological resources, their lives are rich in conversation, reflecting a deep reliance on language as a means of connection. Their preference for constant interaction underscores a broader human tendency: the need to engage with others through speech. Language is not only a tool but a form of social existence, binding individuals together in networks of meaning.

Humans are, in this sense, a linguistic species. Language has extended their cognitive reach, structured their social relations, and enabled the creation of complex cultures. Yet it has also introduced new forms of illusion and conflict, shaping not only what humans can do but how they understand themselves and their world. The question of what language has done to us remains open, but its answer lies in recognising that human life, in all its dimensions, is inseparable from the words through which it is lived.

Burling, R. (2005) The Talking Ape: How Language Evolved. Oxford: Oxford University Press.

1.2. GENESIS

The Broken Puzzle of Language: From Fragments to System

Morten H. Christiansen and Nick Chater in 'Creating Language: Integrating Evolution, Acquisition, and Processing' confront the fragmentation of the language sciences by proposing an integrative framework in which language is understood as an emergent system shaped simultaneously by processing, learning, and cultural evolution. The starting point is a broader intellectual diagnosis: modern scholarship has been dominated by 'splitters', those who divide phenomena into ever more specialised domains, at the expense of 'lumpers', who seek unifying patterns. This imbalance has produced a proliferation of isolated subfields, each generating detailed insights yet failing to contribute to a coherent understanding of language as a whole. What appears as progress within each domain becomes, at a larger scale, a form of epistemic disintegration, where knowledge accumulates without synthesis. Language itself, however, resists such fragmentation. It is not a static object that can be partitioned into independent components, but a dynamic process unfolding across multiple temporal scales. Every utterance, produced in real time, leaves cognitive traces that influence future behaviour, and these traces accumulate across individuals and generations.

Over time, patterns that are easier to process and learn become entrenched, while those that impose excessive cognitive demands are gradually eliminated. Language change over decades is thus continuous with its evolution over millennia, revealing that linguistic structure is not imposed from above but emerges from repeated interaction under cognitive constraints. This perspective challenges the traditional divisions that have structured linguistic theory. Distinctions such as competence versus performance, or grammar versus lexicon, are revealed as methodological conveniences rather than ontological realities. The separation of competence from performance, for instance, assumes that an idealised system of knowledge can be studied independently of actual language use. Yet linguistic structure is shaped by the very constraints that govern real-time processing, including the limitations of memory and attention. The so-called 'Now-or-Never bottleneck' illustrates this point: linguistic input must be rapidly processed and compressed, leaving little opportunity for the construction of abstract representations detached from use. Competence, in this view, is not an independent system but the residue of performance, the stabilised outcome of repeated processing operations. Similarly, the distinction between core and periphery in generative grammar, which separates regular syntactic patterns from irregular exceptions, becomes untenable. Irregularities are not peripheral anomalies but manifestations of the same mechanisms that produce regularity. Language forms a continuum in which patterns of varying degrees of generality coexist, shaped by usage and historical processes. By treating irregularities as central rather than marginal, one can account for the full range of linguistic phenomena without resorting to artificial boundaries. The integration of acquisition and processing further reinforces this approach.

Learning a language is not the activation of an innate grammatical system but the gradual acquisition of processing skills through repeated exposure. Children learn to understand and produce language by engaging with it in real time, extracting patterns from experience and adapting to the constraints of communication. The same mechanisms that support first-language acquisition operate in second-language learning, suggesting that linguistic competence arises from general cognitive processes rather than from a specialised, domain-specific faculty. This continuity between acquisition and processing dissolves another traditional divide, revealing that learning and use are inseparable aspects of the same system. The relationship between evolution and change undergoes a similar reconfiguration. Linguistic evolution is often treated as a biological phenomenon, distinct from the cultural processes of language change. Yet the structure of language

is primarily shaped by cultural transmission, as patterns that are easier to process and learn are preferentially retained. Over generations, these cultural processes produce systems that appear highly structured, even though they arise from the cumulative effects of individual interactions. Biological evolution provides the cognitive capacities necessary for language, but the specific forms of linguistic structure are the result of cultural dynamics. The boundary between evolution and change thus dissolves, replaced by a continuum in which short-term adaptations and long-term transformations are governed by the same principles. Grammar, within this framework, is reinterpreted as the historical trace of processing. Rather than existing as an abstract system of rules, it reflects the ways in which linguistic elements are chunked, combined, and interpreted during communication.

Patterns that facilitate efficient processing become stabilised as grammatical structures, while those that hinder comprehension are discarded. Syntax, therefore, is not an independent module but an emergent property of the interaction between cognitive constraints and communicative demands. This view aligns with usage-based and constructionist approaches, emphasising that linguistic structure is grounded in experience rather than imposed by an innate blueprint. The apparent order of language, often taken as evidence of an underlying design, emerges from this process of cumulative adaptation. Regularities arise as the cognitive system generalises from repeated patterns, creating structures that are easier to process and learn. Irregularities persist as remnants of historical processes, reflecting the interplay between innovation and constraint. Language, in this sense, is both structured and contingent, shaped by the tension between efficiency and historical inertia. The broader implication of this integrative approach is that the fragmentation of linguistic disciplines is not merely an institutional problem but a conceptual one. By treating different aspects of language as independent domains, researchers obscure the interdependencies that give rise to linguistic phenomena. The analogy of the crossword puzzle captures this limitation: solving individual clues in isolation provides partial answers, but only by considering their intersections can the full pattern emerge. Language requires a similar mode of analysis, one that recognises the mutual constraints between processing, acquisition, and evolution. The critique extends beyond linguistics to the structure of knowledge itself. The proliferation of specialised vocabularies and methodologies has created barriers to communication between disciplines, mirroring the very problem that language is meant to solve. Without a shared framework, insights remain confined within their respective domains, preventing the synthesis necessary for deeper understanding.

The reintegration of the language sciences thus becomes both an intellectual and a practical imperative. It demands a shift from division to connection, from isolated analysis to systemic thinking. Such a shift does not eliminate specialisation but situates it within a broader context, allowing individual insights to contribute to a unified theory. Language, as a system that integrates cognitive, cultural, and social processes, provides a model for this reintegration. By recognising its emergent nature, one can move beyond artificial dichotomies and develop a framework that reflects the complexity of the phenomenon itself. The result is not a simplification but a reconfiguration, in which the apparent diversity of linguistic phenomena is understood as the expression of underlying principles operating across multiple scales. In this way, the fragmented puzzle of language can be reassembled into a coherent system, revealing patterns that were previously obscured by the very divisions intended to clarify them.

Christiansen, M.H. and Chater, N. (2016) Creating Language: Integrating Evolution, Acquisition, and Processing. Cambridge, MA: MIT Press.

The Grammar of Power: Standard Language as Engineered Inequality

The anonymous text 'Planned Inequality of Standard Language' articulates a critical view of linguistic standardisation as a deliberate social mechanism through which hierarchy is stabilised and reproduced, arguing that what is presented as linguistic order is in fact a political arrangement that privileges certain speakers while marginalising others. The establishment of a standard language does not arise from neutral linguistic necessity but from the consolidation of power, where one variety is elevated and codified as the norm. This process embeds inequality within language itself, transforming differences in speech into markers of social distinction. The comparison with political theory clarifies this dynamic: just as structured systems of governance can be designed to limit participation while preserving the appearance of consent, standard language operates as a regulated system that channels communication through the norms of a dominant group. It produces not only linguistic uniformity but also social stratification, as access to the standard becomes a prerequisite for participation in institutional life. Against this imposed order stands the ideal of language as a domain of freedom, where diversity, adaptability, and collective creativity define communication. A language grounded in equality would not privilege one form over others but would recognise the multiplicity of ways in which meaning can be expressed. Standardisation, however, introduces constraints that redefine linguistic variation as deviation.

By establishing criteria of correctness based on the practices of an elite, it converts difference into deficiency. Dialects and vernaculars, despite their internal coherence and expressive capacity, are relegated to inferior status, reinforcing broader patterns of exclusion. The imposition of linguistic norms thus extends beyond grammar and vocabulary, shaping social identities and limiting opportunities for those whose speech does not conform. The process of standardisation reveals its political character most clearly in its institutionalisation. The codification of language through dictionaries, grammars, and educational systems transforms contingent practices into authoritative rules. These rules, presented as objective standards, derive their legitimacy not from linguistic superiority but from their association with centres of power. Institutions such as academies and state bodies formalise these norms, aligning language with projects of national identity and administrative control. In doing so, they naturalise the language of the dominant class, presenting it as the universal form while obscuring the social forces that produced it. The result is a system in which linguistic authority mirrors political authority, reinforcing the legitimacy of existing hierarchies. The belief in the inherent superiority of standard language is exposed as a myth sustained by this system. Linguistic analysis demonstrates that all dialects possess structured grammars and are capable of expressing complex meanings. Differences between them are not indicators of deficiency but variations in form and usage. The persistence of claims about the inadequacy of non-standard varieties reflects social prejudice rather than empirical reality. The adaptability of language further undermines the notion of hierarchy. Concepts that appear unique to one language can be translated, explained, or borrowed, demonstrating that expressive capacity is not confined to specific forms.

The movement of words across linguistic boundaries illustrates the fluidity of language and the artificiality of rigid classifications. Despite these insights, standardisation continues to function as a mechanism of exclusion. Mastery of the standard becomes a condition for access to education, employment, and social mobility, effectively transforming linguistic competence into a form of capital. Those who possess it gain entry into positions of influence, while those who do not are systematically disadvantaged. The concept of correctness serves as a gatekeeping device, legitimising the exclusion of certain speakers under the guise of maintaining standards. The stigmatisation of particular expressions exemplifies this process. Forms that are grammatically

valid within their own systems are deemed unacceptable in formal contexts, not because of linguistic inadequacy but because of their association with marginalised groups. This dynamic reinforces class divisions, embedding inequality within everyday communication. The possibility of linguistic equality requires a reorientation of this system. Rather than treating the standard as the measure of linguistic value, it must be understood as one variety among many, useful in certain contexts but not inherently superior. Recognising the legitimacy of diverse forms of speech challenges the assumptions that underpin linguistic hierarchy and opens the way for more inclusive practices. Education and public discourse play a crucial role in this transformation, as they can either reinforce or challenge existing norms. Moving away from punitive approaches to non-standard usage and towards an appreciation of linguistic diversity allows language to function as a bridge rather than a barrier. Historical examples illustrate the contingent nature of standardisation.

The development of competing standards in Norway, or the construction of distinct linguistic identities in the Balkans, demonstrates that what is presented as linguistic necessity is often the result of political and cultural decisions. These cases reveal that standard languages are not natural endpoints of linguistic evolution but products of deliberate intervention, shaped by the needs of state formation and identity construction. Language, therefore, must be understood as a site of struggle, where competing forces seek to define what counts as legitimate communication. The standard is not a neutral instrument but a reflection of power relations, continually reproduced through institutional practices and social expectations. To challenge this system is not to reject standardisation entirely but to expose its limits and to resist its transformation into a measure of human worth. Language, in its plurality, offers the possibility of a more equitable form of social interaction, one in which difference is not suppressed but recognised as a fundamental condition of communication.

The Lost Song of Speech: When Language Was Music

Jean-Jacques Rousseau in 'Essay on the Origin of Languages: In Which Melody and Musical Imitation Are Treated' proposes that language did not originate as a neutral instrument of communication but as an expressive extension of human emotion, emerging from passion before it became subordinated to reason, and that its earliest form was inseparable from music. In this account, the origin of speech lies not in the need to exchange information but in the impulse to express feeling. Love, fear, desire, and wonder preceded calculation, and the first utterances were not dry signals but melodic inflections shaped by the voice's emotional intensity. Language, at its birth, was sung rather than spoken, its rhythm and tone carrying as much meaning as the words themselves. Music was therefore not an addition to language but its original condition, the medium through which affect became communicable. The later separation of language and music marks not a development but a loss, a departure from an earlier unity in which expression and meaning were fused. This transformation is further illuminated through Rousseau's contrast between southern and northern languages, where geography becomes a metaphor for the division between passion and necessity. In warmer regions, language retains its melodic and expressive qualities, reflecting a social life oriented toward interaction, pleasure, and emotional exchange. In colder climates, by contrast, language becomes harder, more monotonous, shaped by the demands of survival and the constraints of environment.

The voice, once fluid and expressive, becomes functional, stripped of its musicality. This distinction is not merely descriptive but evaluative, suggesting that language loses something essential when it becomes subordinated to utility. The decline of melody signals the decline of

expressive richness, as speech moves away from its origins in lived experience and toward abstraction. Central to this argument is the role of melody as the primary carrier of meaning in early language. Melody does not merely decorate speech; it constitutes its emotional logic, mirroring the inflections of the human voice as it responds to the world. Through melody, language imitates not external objects but internal states, translating feeling into sound. Musical imitation, in this sense, extends beyond representation to participation, allowing listeners to experience the emotions conveyed. Harmony, by contrast, represents a later development, an intellectualisation of music that distances it from its origins. Where melody connects directly to the human voice, harmony introduces a level of abstraction that, while technically sophisticated, reduces the immediacy of expression. The shift from melody to harmony parallels the transformation of language from expressive to analytical, from a medium of feeling to a system of rules. This process is understood by Rousseau as a form of degeneration, linked to the broader evolution of society. As social structures become more complex, language becomes more regulated, its grammar systematised, its forms standardised.

Writing further accelerates this transformation, privileging permanence over presence and structure over spontaneity. Speech, once alive with variation and emotion, becomes constrained by conventions that prioritise clarity and precision. The same process occurs in music, where technical complexity replaces expressive immediacy. What is gained in order is lost in vitality, as both language and music become detached from their origins in human experience. This degeneration is not merely aesthetic but ethical, reflecting a deeper corruption in the relationship between humans and their own nature. The connection between language and governance reveals the political dimension of this transformation. In societies where public discourse plays a central role, language must persuade, inspire, and move, retaining its sonic and emotional power. The voice becomes an instrument of collective life, capable of shaping opinion and mobilising action. In more hierarchical or authoritarian contexts, language loses this function, becoming terse and instrumental, designed to convey commands rather than to engage. The decline of expressive language thus mirrors the decline of participatory politics, as speech is reduced to a tool of administration rather than a medium of shared experience. Language, in this sense, reflects the structure of the society in which it is embedded, revealing the conditions under which it is used. Rousseau's critique of modern language and music follows from this diagnosis.

Contemporary forms, particularly those that prioritise technical refinement and structural clarity, are seen as having lost their connection to the emotional and sensory dimensions of human life. Language becomes precise but cold, capable of conveying information but unable to evoke feeling. Music becomes complex but distant, admired for its construction rather than experienced for its immediacy. This shift is not accidental but the result of a broader movement toward abstraction, where systems of representation replace direct engagement with the world. The consequence is a form of communication that is efficient but impoverished, capable of organising thought but no longer capable of expressing the fullness of human experience. The underlying argument suggests that language carries within it the history of its own transformation. What appears as progress in structure and clarity conceals a loss of expressive depth, a movement away from the conditions that gave language its original power. The melodic origin of speech represents a moment in which communication was inseparable from feeling, where meaning was not only understood but felt. The subsequent development of grammar, writing, and analytical language introduces distance, creating a system that can operate independently of immediate experience.

This distance allows for new forms of thought and organisation, but it also introduces a division between expression and existence, between what is said and what is lived. Language, in this

account, becomes both a gain and a loss, a system that expands human capacity while simultaneously obscuring its origins. To recover the significance of this transformation is not to reject the developments that followed but to recognise their cost, to see in the structure of modern language the trace of a lost unity between voice, emotion, and meaning. The origin of language, understood as song, reveals that communication was once an act of shared resonance, a way of aligning human experience through sound. Its evolution into a system of rules and representations marks the emergence of a different mode of existence, one in which language no longer simply expresses life but reorganises it, transforming the human relation to the world and to itself.

Rousseau, J.-J. (1781) Essay on the Origin of Languages: In Which Melody and Musical Imitation Are Treated.

The First Signs of Speech: Between Gesture and Voice

Jean-Jacques Rousseau in 'Essay on the Origin of Languages' introduces his draft preface and opening chapter as a reflection on the origins of communication, revealing a tension between hesitation and necessity, where a fragment once discarded as excessive and misplaced gradually acquires its own autonomy and demands expression. The text emerges not as a finished system but as a recovered remainder, shaped by doubt, external encouragement, and the recognition that certain questions exceed the boundaries of their original context. What begins as an appendix to inequality becomes an inquiry into the foundations of human expression itself, suggesting that language cannot be confined to a single philosophical problem but extends into the broader conditions of human existence. From this point, Rousseau moves toward the fundamental distinction that defines humanity: speech separates humans from animals, while language differentiates one people from another. Yet this distinction immediately produces a deeper question, namely why particular forms of speech attach themselves to specific communities. The answer, Rousseau suggests, lies not in arbitrary convention but in natural causes that precede social organisation. Language, though often treated as a constructed system, originates in the encounter between beings who recognise each other as conscious and capable of thought.

This recognition generates the impulse to communicate, and communication itself must operate through the senses, through what can be seen and heard. In this sense, language begins not as abstraction but as embodied interaction, grounded in the physical capacities of the human organism. Gesture and voice emerge as the two primary modalities of this early communication, each with its own logic and expressive potential. Gesture, Rousseau argues, possesses an immediacy and richness that speech initially lacks. Visual signs can convey complex meanings instantaneously, their forms more varied and their impact more direct. A single image or movement can communicate what would require many words, suggesting that the earliest languages may have relied more heavily on visible signs than on articulated sounds. The example of the lover tracing the outline of the beloved illustrates this point: the act of drawing captures an emotional intensity that language struggles to reproduce. In such moments, communication is not mediated by rules but by presence, by the direct transmission of feeling through form. Ancient societies, in this view, operated within a semiotic world where gesture preceded speech, where meaning was enacted rather than described. The historical anecdotes of silent communication reinforce this idea, demonstrating that actions can carry a force that exceeds verbal explanation. A gesture, precisely because it avoids abstraction, can produce an immediate and decisive effect, compelling interpretation without the need for translation.

Yet the power of gesture is not absolute. Rousseau introduces the voice as a second, equally fundamental dimension of communication, one that operates not through spatial immediacy but through temporal succession. Sound unfolds over time, striking the listener repeatedly and thereby producing a cumulative emotional effect. While a visual image may impress the mind, the voice penetrates the heart, its tones and inflections carrying an affective force that bypasses rational deliberation. The cry of suffering, the modulation of speech, the rhythm of lamentation—all these elements engage the listener in a way that static signs cannot. The theatre provides a model for this dynamic, where speech alone, even in the absence of gesture, can evoke profound emotional responses. The voice, in this sense, introduces a different mode of communication, one that is less immediate but more immersive, capable of sustaining attention and deepening affect. The interplay between gesture and voice reveals that language is not reducible to a single medium but emerges from the interaction between visual and auditory signs. Rousseau's speculation about a society without speech further radicalises this insight.

If human needs had remained purely physical, gesture alone might have sufficed for communication. Complex systems of exchange, governance, and cooperation could, in principle, be sustained through visible signs, as evidenced by practices of silent trade and the communicative systems of those deprived of speech. This suggests that language is not determined by a specific organ but by a more fundamental human capacity, an impulse to communicate that adapts to available means. Speech, therefore, is not inevitable but contingent, a particular solution to the broader problem of expressing thought. This contingency becomes clearer when Rousseau contrasts human language with animal communication. Animals possess the physical ability to produce sounds and signals, yet their systems remain fixed, governed by instinct and resistant to change. Human language, by contrast, is defined by its mutability, its capacity to evolve, to generate new forms, and to adapt to changing conditions. This capacity introduces both possibility and risk. It allows for innovation, for the expansion of meaning, and for the development of complex social structures, but it also opens the way to distortion, ambiguity, and excess. The distinction between human and animal communication thus lies not in the presence of signs but in their variability, in the fact that human language is not bound to a stable code but is constantly reconfigured through use. The origin of language, as Rousseau presents it, reveals a dual movement.

On the one hand, it arises from natural causes, from the sensory interaction between individuals and the emotional impulses that drive expression. On the other hand, it develops through invention, through the gradual refinement and transformation of signs into systems. Language is neither purely instinctive nor purely artificial; it is a hybrid, a product of necessity that becomes a medium of creativity. This duality defines its role in human life. Through language, humans extend their capacities beyond immediate experience, transforming perception into meaning and interaction into structure. Yet this transformation also introduces a distance between expression and reality, as signs begin to operate independently of the experiences they once directly conveyed. In this tension between immediacy and mediation, between gesture and voice, one can glimpse the origin of a system that will eventually organise not only communication but thought itself. Language emerges as both a bridge and a threshold, connecting individuals while simultaneously introducing the possibility of misalignment, of difference, and of interpretation. It is through this system that humans distinguish themselves, not simply by speaking, but by creating forms of speech that continually reshape the conditions of their own existence.

Rousseau, J.-J. (1781) Essay on the Origin of Languages.

The Cry Before Reason: Passion as the First Language

Jean-Jacques Rousseau in 'Essay on the Origin of Languages' advances in Chapter II the decisive claim that speech did not arise from necessity but from passion, overturning the rationalist assumption that language developed as a tool for survival and instead locating its origin in the emotional life of early humans. The distinction he introduces between gesture and voice becomes here a distinction between need and passion: gestures answer to practical demands, while vocal expression emerges from the movements of the heart. This separation reframes the entire problem of linguistic origin, suggesting that the earliest forms of speech were not designed to organise labour or coordinate action but to express affect, to externalise inner states that could not remain contained within the individual. Against the image of language as a calculated system constructed by reasoning minds, Rousseau proposes that the first languages resembled poetry rather than geometry. They were not composed according to rules but shaped by intensity, by the urgency of feeling that seeks expression before it seeks clarity. The evidence for this claim, he suggests, lies in the character of ancient languages, particularly those associated with early oriental traditions. These languages do not display the rigid structure or systematic precision that later theories attribute to linguistic development.

Instead, they are marked by figurative richness, by an expressive force that reflects their origin in passion rather than in calculation. Their forms are not the result of deliberate design but of spontaneous articulation, where meaning is inseparable from tone, rhythm, and emphasis. This challenges the assumption that language progresses from simplicity to complexity through rational refinement. Rather, it suggests that language begins in excess, in a surplus of expression that precedes the imposition of order. The argument becomes more radical when Rousseau turns to the role of human needs. If language had arisen from necessity, it would have emerged in contexts where individuals required coordination to survive. Yet the basic needs of life—hunger, thirst, the search for resources—tend to separate individuals rather than bring them together. The imperative to secure food or shelter encourages dispersion, not communication. To claim that these same forces gave rise to language would be to assume that what divides also unites, that isolation produces dialogue. Rousseau rejects this paradox, insisting that the conditions of survival do not generate the conditions of speech. Language requires proximity, interaction, and mutual recognition, none of which are guaranteed by the pursuit of necessity. Instead, it is the passions that create the conditions for communication. Emotions draw individuals together, compelling them to engage with one another in ways that transcend immediate survival. Love seeks response, anger demands confrontation, pity calls for recognition, and hatred provokes reaction. These affective states generate a need not for coordination but for expression, a need to be heard and to influence others.

It is within this space of emotional interaction that speech emerges, not as a tool but as an outcry. The first words are not names or commands but cries, exclamations, and accents shaped by feeling. They do not describe the world but enact a relation to it, expressing the speaker's position within a field of affective forces. This origin explains the melodic quality of early language. Because speech arises from emotion, it carries the tonal variations associated with feeling. The voice does not simply transmit information but modulates itself according to the intensity and nature of the passion it conveys. Language, in its initial form, is therefore inseparable from music, its meaning embedded in its sound. The later development of structured grammar and abstract vocabulary represents a departure from this condition, a movement toward a system in which meaning is detached from its expressive origin. Yet this development does not erase the trace of its beginnings. The persistence of intonation, emphasis, and rhythm in speech suggests that language retains within itself the memory of its emergence from passion. Rousseau's argument also implies a

different understanding of human cognition. If language originates in feeling rather than in reasoning, then thought itself is shaped by affective experience. Humans do not begin by analysing the world but by responding to it, by being moved before they understand. Language, as the medium of this response, carries the imprint of this priority. It is not a neutral instrument but a continuation of the body's engagement with its environment, a transformation of sensation into sound.

The rationalisation of language, its transformation into a system of rules and categories, represents a secondary development, one that reorganises but does not replace its original function. This perspective reconfigures the relationship between language and society. If speech arises from passions that bring individuals together, then language is fundamentally social, rooted in interaction rather than in individual cognition. It is through the expression of feeling that humans recognise one another as beings capable of communication, and it is through this recognition that communities form. Language does not merely reflect social life; it constitutes it, providing the means through which individuals engage, influence, and respond to one another. The later use of language for practical purposes, for coordination and administration, builds upon this foundation but does not define it. At its core, language remains tied to the need to express and to be acknowledged, to the dynamics of attraction and repulsion that structure human relations. The claim that speech derives from passions rather than needs thus alters the entire narrative of linguistic origin. It shifts the focus from function to expression, from utility to intensity, from survival to relation. Language becomes not a response to the environment but a response to others, a medium through which the inner life is externalised and shared. This origin leaves a lasting mark on its structure and use, ensuring that even the most abstract forms of communication retain a residual connection to the voice, to the modulation of sound that carries meaning beyond words. In this sense, language never fully escapes its beginnings. Beneath its systems and conventions, it continues to resonate with the echoes of its first utterances, the cries through which humans first reached toward one another.

Rousseau, J.-J. (1781) Essay on the Origin of Languages.

The First Metaphors: When Fear Named the World

Jean-Jacques Rousseau in 'Essay on the Origin of Languages' argues in Chapter III that the earliest human speech was necessarily figurative, not because language had already developed literal meanings to be extended, but because perception itself was originally shaped and distorted by the passions, making metaphor the primary mode of naming rather than a later embellishment. This claim reverses the conventional hierarchy between literal and figurative language. Instead of metaphor arising from the manipulation of already established meanings, Rousseau suggests that meaning itself emerges from a prior field of affective intensity, where things are not yet stabilised as objects but appear through the lens of fear, desire, or wonder. Language, in this primordial state, does not describe the world as it is but as it is felt, and this feeling transforms perception into image before it becomes concept. The objection that figurative language presupposes literal meaning is thus displaced. Rousseau redirects attention from the structure of words to the structure of experience, insisting that the figurativeness of early language lies not in linguistic deviation but in the imaginative deformation of reality itself. The passions do not merely colour perception; they constitute it, producing images that exceed or distort what later becomes recognised as objective. Words follow these images, attaching themselves to impressions that are already intensified, enlarged, or altered.

In this sense, the first act of naming is not an act of classification but of projection, where the external world is interpreted through the internal state of the subject. The example of the frightened individual encountering another human for the first time illustrates this process with clarity. Faced with an unfamiliar presence, the observer does not perceive a neutral equal but an overwhelming figure, magnified by fear into something beyond human scale. The name given in this moment, such as 'giant', does not misrepresent a stable reality; it faithfully expresses the experienced reality of fear. Only later, through repeated encounters and the attenuation of emotional intensity, does perception adjust, and a more measured term, such as 'man', emerges. The transition from figurative to literal language is therefore not a correction imposed from outside but a reorganisation of experience itself, as the dominance of passion gives way to the stabilising influence of reflection. Yet the original term does not disappear. It remains as a residue of the earlier mode of perception, preserved as a figure that can be reactivated when similar emotions arise. In this way, metaphor retains its connection to its origin, functioning as a bridge between past intensity and present understanding. This dynamic reveals that language develops not by replacing one system with another but by layering new meanings over old ones. Figurative expressions persist because they continue to resonate with the conditions that produced them, even as those conditions are no longer dominant.

The poetic dimension of language is thus not an ornament added to a rational core but the foundation upon which that core is built. Reason does not eliminate metaphor; it reorganises it, assigning it a different place within the structure of language while preserving its expressive power. The implication is that language carries within it the history of its own formation, a sedimentation of perceptual and emotional states that continue to shape its use. The movement from figurative to literal language corresponds to a broader transformation in human cognition. As individuals become more capable of distinguishing between appearance and reality, between subjective impression and objective form, language becomes more precise, more aligned with stable referents. This process introduces the possibility of error and correction, of recognising that initial impressions may not correspond to enduring truths. Yet this recognition does not negate the value of the earlier stage. The figurative origin of language reveals a mode of engagement with the world that is immediate and immersive, where meaning is inseparable from experience. The later development of literal language introduces distance, allowing for abstraction and generalisation, but at the cost of reducing the intensity of expression. Language thus evolves along a trajectory that moves from immersion to reflection, from participation to representation. This trajectory also explains why figurative language remains indispensable.

Even in its most rational forms, language must return to metaphor to express what cannot be fully captured by literal terms. Concepts that exceed direct experience, whether emotional, social, or abstract, require the reactivation of figurative structures that can convey their complexity. The persistence of metaphor indicates that the conditions of its origin are never entirely overcome. The passions continue to shape perception, and language continues to draw upon this shaping to generate meaning. The earliest forms of speech, far from being primitive errors, constitute the ground upon which all subsequent linguistic development rests. They demonstrate that language begins not with clarity but with excess, with an overabundance of meaning that must later be disciplined and organised. The claim that the first languages were poetic is therefore not a romantic exaggeration but a structural insight. Poetry, in this context, is not a genre but a mode of expression in which meaning is inseparable from its affective charge.

The transition to literal language represents a shift in emphasis rather than a complete transformation, as the underlying mechanisms of association, projection, and intensification

remain operative. Language, even in its most abstract forms, continues to rely on the capacity to imagine, to extend meaning beyond immediate reference, and to reconfigure perception through words. In this sense, the origin of language as figurative establishes a permanent condition: that speech is always, at some level, an act of imagination, a reworking of reality through the interplay of perception and passion. The first metaphors do not disappear; they become the hidden structure of all subsequent discourse, ensuring that language remains rooted in the very forces that first brought it into being.

Rousseau, J.-J. (1781) Essay on the Origin of Languages.

The Singing Tongue: Before Grammar, There Was Accent

Jean-Jacques Rousseau in ‘Essay on the Origin of Languages’ describes in Chapter IV a primordial language whose defining feature is not articulation but accent, not structure but sonority, arguing that the earliest form of speech was closer to song than to the organised systems later recognised as languages. He begins from a physiological observation that carries profound philosophical consequences: the most basic human sounds—cries, sighs, exclamations—require no training, no refinement, and no conscious effort. They emerge directly from the body, from the throat opened by impulse rather than by intention. These sounds precede language in its articulated form, and they persist within it as its irreducible remainder. Articulation, by contrast, is an achievement rather than a given. It demands coordination, discipline, and learning; it transforms the raw emission of sound into structured phonation through the controlled use of tongue, palate, and lips. This distinction suggests that what is commonly taken as language—the articulated system—is in fact a later imposition upon a more primitive, more immediate vocal field. The first language, therefore, must be sought not in consonantal precision but in the fluid continuum of sound shaped by accent and intonation. From this starting point, Rousseau redefines the nature of linguistic richness.

The diversity of speech does not arise primarily from the multiplication of discrete articulations but from the modulation of a limited set of sounds through accent. Just as musical notes can generate infinite variations through pitch, duration, and intensity, so too can the human voice produce an inexhaustible range of expressions from a relatively small phonetic inventory. Accent becomes the true engine of variation, capable of transforming identical sequences of sounds into distinct meanings. This principle is exemplified in tonal languages, where pitch distinctions carry semantic weight, but Rousseau generalises it to all early speech, suggesting that accent once played a far more central role than it does in later, more regulated languages. The implication is that the first language was not impoverished but abundant, not because it possessed many elements but because it exploited their variability to the fullest extent. If such a language still existed in its original form, Rousseau suggests, it would appear radically different from modern languages. Its primary function would not be to convey abstract meaning but to evoke passion, to produce impressions that are inseparable from the emotions they express. Words and syntax would be secondary to the overall effect of speech, which would operate as a sensory and affective experience rather than as a logical system. Communication would not aim at clarity in the modern sense but at intensity, at the capacity to move and to affect. The boundary between speaking and singing would be blurred, as rhythm, tone, and quantity would structure utterance more than grammatical rules.

Language, in this state, would be inseparable from music, its organisation governed by principles of harmony and cadence rather than by syntactic order. The phonetic structure of this early language follows from its expressive orientation. With few articulations and a predominance of

vowels, speech would flow easily, its continuity only lightly interrupted by consonants that serve to connect rather than to segment. The voice would move through a wide range of accents, each inflection adding nuance and variation. Rhythm would organise sequences of sounds, while temporal distinctions—length, stress, duration—would further expand expressive possibilities. The result would be a system capable of producing an immense variety of syllables and words without requiring a complex inventory of discrete units. This economy of articulation combined with richness of accent produces a language that is both simple in its elements and complex in its effects. The vocabulary of such a language would reflect its origin in sensation and imitation. Words would often arise from the sounds of nature or from the vocal expressions of human emotion, with onomatopoeia playing a central role. Rather than abstract terms detached from experience, language would consist of expressions closely tied to perceptual and affective realities. The multiplicity of synonyms would not indicate redundancy but adaptability, allowing speakers to choose forms that match specific emotional or situational contexts. In the absence of adverbs and abstract categories, meaning would be conveyed through variation in form, through the modulation of sound and the combination of elements that produce particular effects.

Augmentatives, diminutives, and compounds would function not as grammatical devices in the modern sense but as tools for shaping the rhythm and tone of speech, contributing to its musical quality. Grammar, as later understood, would occupy a marginal position in this system. Rules of agreement, hierarchy, and logical structure would be secondary to considerations of beauty, harmony, and expressive force. Speech would persuade not through argument but through its capacity to affect, to create images and impressions that resonate with the listener. Reasoned discourse, with its reliance on abstraction and inference, would be rare, replaced by aphorisms, images, and figurative expressions that condense meaning into vivid forms. Language would operate as a medium of presence rather than of analysis, bringing ideas to life through sound rather than dissecting them through logic. This orientation aligns early language with poetic expression, not as a specialised form but as the default mode of communication. Rousseau's comparisons with languages such as Chinese, Greek, and Arabic serve to illustrate aspects of this lost condition, each preserving certain features of the original expressive system. Tonal variation, lexical richness, and poetic structure appear as remnants of a stage in which language had not yet been subordinated to grammatical regularity. These examples suggest that the history of language is not a linear progression from simplicity to complexity but a transformation in which certain capacities are diminished as others are developed. The increasing dominance of articulation and grammar brings clarity and precision but at the cost of reducing the role of accent and melody. The voice becomes more controlled but less expressive, more capable of conveying abstract relations but less able to evoke immediate feeling. The reference to philosophical reflections on language underscores the broader significance of this transformation.

The idea that words might bear a natural relation to things, often dismissed as naive, gains a different meaning when considered in light of a language grounded in sound imitation and emotional expression. In such a context, the connection between sign and meaning is not arbitrary but experiential, mediated by the body and the senses. The later development of conventional signs introduces arbitrariness as a defining feature, separating language from its sensory origins. Yet traces of the earlier condition remain, embedded in the patterns of sound and rhythm that continue to shape speech. The first language, as Rousseau reconstructs it, is thus not a primitive precursor to modern systems but a fundamentally different mode of communication, one in which sound, emotion, and meaning are inseparably intertwined. Its transformation into articulated, rule-governed language marks a shift from immediacy to mediation, from expression to representation. What is gained in structure is accompanied by a loss of resonance, as language becomes less a

voice that sings and more a system that speaks. Yet the singing tongue does not disappear entirely; it persists beneath the surface of speech, in accent, in rhythm, in the subtle modulations that continue to carry meaning beyond words. In this persistence, one can hear the echo of a time when language was not yet divided from music, when to speak was to sing, and when meaning was inseparable from the sound that conveyed it.

Rousseau, J.-J. (1781) Essay on the Origin of Languages.

The Silent Script: Writing and the Cooling of Speech

Jean-Jacques Rousseau in 'Essay on the Origin of Languages' argues in Chapter V that the invention of writing marks a decisive transformation in language, not merely preserving speech but fundamentally altering its nature by replacing the expressive richness of the voice with the precision of visible signs, thereby shifting language from passion toward reason. He begins by identifying a general tendency in linguistic history: as languages develop, their sonorous and melodic qualities diminish. Consonants multiply, accents weaken, and grammatical systems become increasingly elaborate. This process enhances clarity and analytical precision, yet it simultaneously erodes the emotional force that once defined speech. Language becomes more exact but less vivid, more capable of expressing ideas yet less able to convey feeling. What appears as progress in structure conceals a loss in intensity, as the living voice yields to the abstract system. Writing provides the clearest evidence of this transformation, offering a parallel history in which the evolution of representation mirrors the evolution of speech. The earliest forms of writing do not attempt to capture language as sound but rather depict the world directly. Images stand for objects, either through direct representation or symbolic association. Such systems correspond to a mode of communication still closely tied to perception and emotion, where meaning is conveyed through resemblance and immediacy. These signs require shared experience and a community bound by common sensibilities, for their interpretation depends not on fixed rules but on the recognition of forms. Writing, at this stage, does not analyse language; it participates in the same expressive field as gesture and early speech. A second stage introduces conventional symbols that represent words or ideas rather than things themselves. Here writing begins to detach from direct perception, relying on agreed meanings rather than visual similarity. This development presupposes a more organised society, one capable of sustaining shared conventions across a broader scale. Language, in this context, has already achieved a degree of stability, and writing becomes a system for encoding that stability. Yet even at this stage, writing does not yet dissect speech into its smallest elements; it remains tied to larger units of meaning, preserving something of the unity between sign and idea. The final stage, the alphabet, represents a radical break. Speech is decomposed into its elementary components—vowels and consonants—which can be recombined to produce any word. This analytical system does not mirror speech as it is experienced but reconstructs it as a sequence of discrete units. Writing becomes a code, capable of representing language across different contexts and communities. Its emergence is linked not to the origin of a language but to the need for communication across linguistic boundaries, particularly in societies engaged in trade and exchange. The alphabet's power lies in its abstraction, in its capacity to detach language from its particular contexts and render it universally legible. Yet this very abstraction signals a loss: the decomposition of speech into elements strips away the continuity and modulation that give it expressive depth. These stages of writing correspond to broader stages of social development, each reflecting a different relation between humans and their means of communication. The pictorial systems of early societies align with a world in which meaning is inseparable from perception and shared experience. Symbolic systems emerge in more

complex communities where convention and agreement structure communication. The alphabet, finally, belongs to societies that prioritise efficiency, generality, and expansion, where language must function across distances and differences. Writing, therefore, does not merely record language; it embodies the conditions of the society that produces it, encoding its priorities and shaping its possibilities. The historical evolution of writing systems further illustrates their contingent and adaptive nature. Early alphabets were incomplete and imprecise, gradually refined through use and necessity. The adoption and modification of existing systems reveal that writing does not emerge fully formed but evolves in response to practical demands. Its direction is not determined by an inherent logic but by the needs of communication, by the pressures exerted by social and economic interaction. This reinforces Rousseau's broader argument that language and its representations are shaped less by internal necessity than by external conditions. The most profound effect of writing, however, lies in its influence on speech itself. Writing does not simply fix language; it transforms it by imposing uniformity and stability. Spoken language, with its variations in tone, rhythm, and accent, conveys meaning through a multiplicity of channels. Writing, by contrast, reduces this multiplicity to a single dimension, privileging visual form over auditory nuance. The expressive qualities of speech—its capacity to move, to persuade, to resonate—cannot be fully captured in written signs. What is preserved is the structure of words, not the life that animates them. In this reduction, language becomes more regular but less alive, more accessible but less immediate. The consequences extend beyond the medium itself. As writing becomes dominant, it begins to shape the way language is used and understood. Speech adapts to written norms, becoming more constrained, more aligned with the expectations of textual representation. The spontaneity of oral expression is replaced by a form of communication that anticipates its own transcription, that conforms to rules designed for visibility rather than audibility. Language thus undergoes a second transformation, not only moving from passion to reason but from voice to script, from sound to sign. The written form, initially a derivative of speech, becomes its model, guiding its evolution and redefining its possibilities. This transformation reflects a broader shift in human priorities. As societies become more complex, the need for precision, permanence, and transmission outweighs the need for immediacy and expression. Writing satisfies these needs, enabling the storage and dissemination of knowledge across time and space. Yet in doing so, it reorients language toward the intellect, privileging clarity over intensity, analysis over resonance. The voice, once the primary medium of human connection, becomes secondary, its expressive capacities subordinated to the demands of the written system. Language, in this sense, is not simply preserved by writing but reconstituted through it, becoming a different kind of phenomenon. The study of writing thus reveals that linguistic evolution is not a neutral process of improvement but a transformation governed by trade-offs. What is gained in order and universality is accompanied by a loss of variability and affect. The genius of speech lies in its capacity to convey the singular, the immediate, the lived experience of the speaker. Writing, by contrast, operates through generalisation, through forms that must be recognisable and repeatable. The tension between these two modes defines the history of language, marking the passage from a world in which meaning is sung to one in which it is inscribed. Beneath the silent script, however, the memory of the voice persists, reminding us that language, even in its most abstract forms, remains rooted in the sounds and passions from which it first emerged.

Rousseau, J.-J. (1781) Essay on the Origin of Languages.

The Poet Without Script: Homer and the Voice Before Writing

Jean-Jacques Rousseau in 'Essay on the Origin of Languages' argues in Chapter VI that the figure of Homer belongs to a world fundamentally shaped by orality rather than writing, proposing that the very qualities of the Homeric epics—their structure, language, and mode of transmission—testify to a culture in which speech, memory, and performance preceded and surpassed the written word. He begins with a suspicion that challenges established tradition: the Greek alphabet, often projected back into remote antiquity, is in fact of relatively recent origin, and its late emergence casts doubt on the assumption that Homer himself, or even his contemporaries, possessed the art of writing. The single reference to written communication within the epic tradition appears anomalous, almost intrusive, as though it belonged to a later moment when the texts were compiled rather than to the conditions of their initial composition. This tension between narrative content and historical plausibility suggests that writing, rather than being native to the Homeric world, was retroactively inscribed into it.

The internal form of the epics reinforces this hypothesis. Their architecture is not that of a text designed for silent reading but of a composition intended for oral delivery. Repetition, formulaic expressions, rhythmic patterns, and vivid imagery all point toward a mode of preservation rooted in memory rather than inscription. Such features are not deficiencies but techniques, enabling the performer to sustain long sequences of narration without reliance on external supports. The poem exists not as a fixed object but as a living performance, recreated with each recitation. Writing, by contrast, would have rendered these techniques unnecessary, replacing the labour of memory with the permanence of the page. The persistence of these oral features indicates that the epics were formed in a context where writing was either unknown or marginal, where the voice remained the primary medium of cultural transmission. Rousseau extends this argument by situating Homer within a broader tradition of sung poetry. The comparison with later figures highlights the uniqueness of a poet whose work is inseparable from performance. Unlike authors who compose for readers, Homer composes for listeners, addressing a collective audience through sound rather than through text. This mode of communication produces a different relation between creator and community. The poem is not a private artefact but a shared event, unfolding in time and space, binding speaker and audience in a common experience. The endurance of such poetry depends not on preservation in material form but on its capacity to be remembered, repeated, and transformed within the community. Writing, when it eventually appears, alters this relation, converting a fluid and communal practice into a fixed and individualised object.

The linguistic character of the Homeric epics further supports their oral origin. The coexistence of multiple dialects within the text suggests a milieu in which linguistic diversity had not yet been standardised through writing. In literate societies, the spread of written forms tends to unify language, reducing variation and establishing norms. In an oral culture, by contrast, dialects persist, reflecting the multiplicity of local practices and the absence of a centralising medium. The presence of such diversity in Homer indicates a stage in which language had not yet been subjected to the homogenising influence of script, remaining closer to the variability and immediacy of speech. The historical development of writing in Greece provides an external confirmation of this internal evidence. The adoption of the Phoenician alphabet, along with its initial orientation from right to left and subsequent experimentation with alternating directions, reveals a process of gradual adaptation rather than an original invention. Writing emerges as a borrowed technique, modified over time to suit local needs. Its late standardisation underscores the likelihood that Greek language and literature existed long before they were inscribed, sustained by oral practices that required no visual representation. The alphabet, in this context, appears not as the origin of language but as a tool introduced into an already established communicative system. This

distinction between language and writing is crucial for Rousseau's broader argument. Writing does not create language; it transforms it. The transition from oral to written culture introduces a new set of constraints and possibilities, reshaping not only the medium of communication but its content and form. In an oral culture, language is inseparable from its performance, its meaning carried by tone, rhythm, and gesture as much as by words. In a written culture, these dimensions are diminished or lost, replaced by the stability and clarity of visual signs. The immediacy of speech gives way to the permanence of text, and with this shift comes a change in the balance between expression and analysis.

Homer's poetry exemplifies the power of the oral mode. Its resonance derives not from its fixation in writing but from its capacity to evoke emotion and imagination through sound. The repetition of phrases, the cadence of lines, the interplay of voice and memory all contribute to an experience that cannot be fully captured in written form. Writing preserves the words but not the event, the structure but not the performance. The transformation of the epics into texts ensures their survival but alters their nature, distancing them from the conditions that produced them. The question of whether Homer knew how to write thus becomes more than a historical curiosity. It becomes a way of distinguishing between two regimes of language: one grounded in the voice, in memory, and in communal experience; the other grounded in the script, in permanence, and in abstraction. The former is characterised by variability, intensity, and presence; the latter by stability, precision, and distance. Homer stands at the threshold between these regimes, his work preserving the traces of a world in which language was still primarily a matter of sound.

The eventual triumph of writing does not erase this earlier mode but reinterprets it. Oral poetry becomes literature, performance becomes text, and the living voice is replaced by the silent page. Yet the enduring appeal of Homer suggests that something of the original power remains, that the written form still carries within it the echo of its oral origin. This echo reminds us that language, before it was fixed, was experienced, that it existed not as an object to be read but as an event to be heard. In this sense, Homer's epics are not merely relics of a past age but witnesses to a different conception of language, one in which speech is inseparable from life and meaning from sound.

Rousseau, J.-J. (1781) Essay on the Origin of Languages.

The Death of Accent: When Language Lost Its Music

Jean-Jacques Rousseau in 'Essay on the Origin of Languages' argues in Chapter VII that modern languages no longer possess true accents in the original sense, because what once functioned as musical modulation of the voice has been reduced to orthographic marks and mechanical distinctions, signalling a deeper transformation in which language has lost its expressive, melodic essence and become subordinated to clarity and convention. The central claim is that accent, in its authentic form, is not a visual sign but a vocal movement, a modulation of pitch produced by the living voice. What modern languages call accents are not accents at all but traces of a lost system, invented only after the original tonal variations had disappeared. These marks belong to writing rather than to speech; they indicate length, omission, or grammatical distinction, but they do not carry the dynamic, musical force that once shaped meaning. The distinction between sound and sign becomes decisive here. True accent originates in the glottis, in the modulation of pitch that transforms a syllable into an event of sound. Modern accents, by contrast, are produced through articulatory adjustments—of lips, tongue, or palate—that affect pronunciation without altering its tonal contour. The result is a flattening of speech, where variation persists only at the level of duration or stress, not of pitch.

The example of the circumflex in French illustrates this shift: what appears as a marker of accent is either a simple elongation of a vowel or a redundant sign, devoid of genuine sonic effect. Accent survives only as notation, not as experience. The contrast with ancient Greek reveals what has been lost. Greek accents were not arbitrary marks but precise indications of pitch movement, integrated into the phonetic structure of the language. The rise and fall of tone were measurable, forming intervals comparable to those in music. Speech, in this context, was inseparable from melody; to speak was to modulate the voice according to patterns that carried both meaning and affect. The acute, grave, and circumflex accents were not conventions imposed after the fact but reflections of an audible reality, a system in which language and music were still intertwined. This musical prosody endowed speech with a richness that modern languages can no longer reproduce, as they have abandoned the tonal dimension in favour of fixed articulation. The misinterpretation of accents in modern languages stems from the confusion between written distinction and spoken variation. Orthographic marks serve to differentiate meanings on the page, not to guide the voice in its modulation. Words that appear distinct in writing may sound identical in speech, revealing that the written system compensates for a loss of auditory differentiation. The experiment of aligning speech with a musical instrument exposes this condition: if the pitch remains unchanged across supposedly accented forms, then accent has ceased to function as a musical feature.

Language becomes compatible with multiple melodic patterns precisely because it no longer contains its own inherent melody. Accent, once intrinsic, becomes extrinsic, imposed from outside rather than generated from within. This transformation is part of a broader evolution in which languages move from expressiveness to rationality. As grammatical systems become more refined, as rules become more explicit, language gains in precision but loses in resonance. The voice, once capable of conveying emotion through its variations, becomes more uniform, more predictable, more aligned with the demands of clarity. Institutions that codify language accelerate this process, stabilising forms and reducing variability. What is gained is a system that can be analysed and taught; what is lost is the immediacy of expression, the capacity of speech to move and to affect. The decline of accent is thus not an isolated phenomenon but a symptom of a deeper reorganisation of language. The historical examples Rousseau invokes illustrate the complex relation between writing and sound. In languages where the written form precedes or dominates the spoken, such as those with dense consonantal structures, speech may appear secondary, constrained by a system designed for visual representation. The divergence between orthography and pronunciation in languages shaped by conquest and transformation reveals how writing can preserve forms that no longer correspond to living speech. The addition of diacritical marks, the retention of obsolete letters, and the persistence of irregular spellings all testify to the attempt to stabilise meaning in the absence of consistent sound. Writing, intended to fix language, becomes a record of its disjunctions, capturing not its present state but its layered history. This disjunction introduces a split within language itself. Speaking and reading become distinct practices, each requiring its own competence. The learner must acquire not only the sounds of the language but also the conventions of its representation, navigating a system in which the two no longer coincide. Language, once unified in the act of speech, becomes divided between voice and script, between what is heard and what is seen.

This division reflects the broader shift from a culture of orality to a culture of literacy, where communication is increasingly mediated by written forms. The consequences of this shift extend beyond phonetics. As language becomes more dependent on writing, its expressive dimension is subordinated to its representational function. Speech is shaped by the expectations of the written system, becoming more standardised, more regulated, less responsive to immediate context. The variability of accent, once a source of richness, is reduced to noise to be eliminated. Language

becomes clearer but less vibrant, more efficient but less alive. The loss of musical prosody marks the passage from a language that sings to one that states, from a voice that resonates to a system that signifies. Yet the memory of this earlier state persists, not as a recoverable system but as a trace within language itself. The desire for expressiveness, the attempt to reintroduce rhythm, intonation, and variation into speech, suggests that what has been lost continues to exert a pull. Modern languages, even in their most regulated forms, cannot entirely escape the need for modulation, for the subtle inflections that carry meaning beyond words. The death of accent is therefore never complete; it is an ongoing process, continually resisted by the residual musicality of the voice. In this tension between loss and persistence, one can discern the history of language as a movement from sound to sign, from melody to measure, a movement that defines not only the evolution of speech but the transformation of human expression itself.

Rousseau, J.-J. (1781) Essay on the Origin of Languages.

Climates of Speech: How Geography Divides the Voice

Jean-Jacques Rousseau in ‘Essay on the Origin of Languages’ argues in Chapter VIII that the diversity of languages cannot be understood without reference to local conditions, especially climate, which shapes not only the form of speech but the very character of expression, revealing that language is never a neutral system but a living response to the environment in which it emerges. The earlier attempt to describe language in general terms, as if it followed a single universal trajectory, proves insufficient when confronted with the evident diversity among linguistic forms. To understand why languages differ so profoundly, one must descend from abstraction into locality, from general theory into the particular conditions that give speech its tone, rhythm, and structure. Language does not arise in a vacuum; it is rooted in the soil of climate, shaped by the conditions of life that surround its speakers. The first error to overcome is the tendency to universalise a local experience, a mistake Rousseau attributes to European thought. By imagining the origins of humanity within the constraints of their own environment—marked by cold, scarcity, and struggle—European theorists project a distorted image onto the beginnings of language. They assume that necessity, hardship, and survival pressures governed the first acts of communication, overlooking the fact that humanity originated in regions where abundance prevailed and where the urgency of survival did not dominate existence.

This misprojection reveals a deeper epistemological problem: the inability to distinguish between the conditions of observation and the conditions of origin. To study humanity requires a displacement of perspective, an expansion beyond the immediate and familiar toward the distant and the diverse. Only by observing the variety of human environments can one begin to grasp the principles underlying language formation. The spread of humanity across the globe introduces a dynamic dimension to this process. From its beginnings in warm climates, the human species expanded into colder regions, adapting to new conditions and transforming its ways of life. This movement was not linear but cyclical, as populations grew, migrated, and returned, carrying with them the traces of their transformations. Language, as an expression of human adaptation, bears the imprint of these movements. It is both a record of migration and a response to environment, encoding within its structures the conditions under which it evolved. The differences between languages are thus not arbitrary but reflect the varied paths of human settlement and interaction. Climate emerges as a decisive factor in this differentiation. In warm regions, where the abundance of nature reduces the pressure of survival, language develops in a context of relative ease. Here, speech becomes an extension of leisure and sociability, shaped by the expression of passions rather than the demands of necessity. The resulting languages are rich in melody, ornament, and

figurative expression, reflecting a mode of life oriented toward emotional and social engagement. Sound carries not only meaning but affect; speech is imbued with rhythm and variation, approaching the qualities of song.

In such environments, language retains its proximity to its origins in passion, preserving a sensuous and expressive character. In contrast, colder climates impose a different regime upon human life. The demands of survival—scarcity of resources, harsh weather, the need for coordination and efficiency—reshape the conditions under which language operates. Speech becomes a tool for precision, a means of organising action and conveying information with clarity. The expressive richness of earlier forms gives way to structural economy; languages become more concise, more regulated, more oriented toward function than toward feeling. This transformation does not imply a deficiency but a reorientation, a shift from one mode of communication to another. Language adapts to necessity, sacrificing melodic variation for communicative efficiency, reducing ambiguity in favour of clarity. The divergence between southern and northern languages thus reflects not merely a difference in sound but a difference in orientation. In the south, language leans toward expression, toward the articulation of inner states and the evocation of shared feeling. In the north, it leans toward representation, toward the accurate transmission of information and the coordination of action. These tendencies are not absolute but relative, forming poles within a spectrum of linguistic variation. Yet they reveal a fundamental principle: language is shaped by the conditions of life, by the balance between necessity and leisure, between survival and expression.

This insight challenges the notion of language as a purely rational or universal system. Instead, it presents language as a historical and environmental phenomenon, emerging from the interplay between human needs and natural conditions. The attempt to derive language solely from abstract principles or from a single origin overlooks the multiplicity of factors that contribute to its formation. Climate, geography, migration, and social organisation all participate in shaping linguistic forms, producing a diversity that cannot be reduced to a single model. To return to the roots of language, then, is not to seek a single origin but to recognise the plurality of beginnings. It requires abandoning the projection of local experience onto universal history and embracing a broader perspective that accounts for the diversity of human environments. Language, in this view, becomes a map of human adaptation, a record of how different communities have responded to the conditions of their existence.

It is both a product of nature and a creation of culture, shaped by forces that operate across time and space. In this sense, the study of language origins is inseparable from the study of human diversity. The differences between languages are not obstacles to understanding but clues to the processes that have shaped humanity itself. By tracing these differences back to their local causes, one uncovers the interplay between environment and expression, between climate and speech. Language emerges as a living system, continually transformed by the conditions in which it is used, reflecting the history of its speakers and the environments they inhabit. The voice, divided by geography, carries within it the memory of these divisions, preserving in its variations the traces of a world shaped by difference.

Rousseau, J.-J. (1781) Essay on the Origin of Languages.

Waters of Passion: Where Language First Began

Jean-Jacques Rousseau in ‘Essay on the Origin of Languages’ argues in Chapter IX that the first true languages emerged not from necessity but from the emotional and social encounters of early

humans in warm climates, where environmental abundance and shared spaces gradually transformed isolated beings into communicative communities bound by passion rather than survival. In the earliest condition of humanity, individuals lived dispersed, confined within small familial units and lacking any broader sense of social belonging. Without shared institutions, laws, or articulated speech, communication was limited to gestures and primitive vocalisations. In such a state, the absence of knowledge produced fear, and fear produced hostility. Each individual perceived others as potential threats, and strength alone governed interaction. What appears as cruelty in this condition is not the result of moral corruption but of ignorance, a defensive response of beings who do not yet recognise one another as similar. Humanity, at this stage, exists without the cognitive and emotional frameworks necessary for society. The emergence of social affections marks a decisive transformation in this condition. Pity, compassion, and justice do not arise spontaneously from mere proximity; they depend on imagination, on the ability to project oneself into the experience of another. This capacity is not given at the outset but develops through exposure, comparison, and reflection. The solitary individual, confined to immediate sensations and lacking the means to generalise or abstract, cannot feel beyond the self.

Even when surrounded by others, such a being remains isolated, incapable of recognising shared suffering or common humanity. The birth of empathy therefore presupposes a widening of experience, a movement from the immediate to the reflective, from sensation to imagination. This transformation introduces a paradox into early human existence. Within the family, affection is intense and concentrated, yet beyond it, indifference or hostility prevails. The same mechanism that strengthens bonds within a small group reinforces separation from others. Humanity is thus divided into islands of intimacy surrounded by an ocean of estrangement. This condition, though marked by violence in principle, results in relatively little conflict in practice, as encounters between groups remain rare. It is a world of fragmentation, where peace exists not through harmony but through distance. In this sense, the earliest stage of humanity can be described as a form of equilibrium without unity, a balance maintained by separation rather than by cooperation. The evolution of modes of subsistence further reshapes this condition. The transition from foraging to more structured forms of life introduces new patterns of interaction. Hunting, associated with strength and independence, fosters a form of existence marked by mobility and confrontation. Pastoral life, by contrast, introduces a degree of stability, encouraging more regular interaction and the beginnings of social cohesion. Agriculture, requiring foresight, cooperation, and the management of resources, transforms these tendencies into structured societies, bringing with it not only organisation but also hierarchy, property, and inequality. Each stage of livelihood corresponds to a different form of social relation, and with it, to a different potential for communication.

Yet the decisive factor in the formation of early societies and languages is not simply economic but environmental. In fertile and mild climates, where resources are abundant, individuals can remain isolated for longer periods, delaying the necessity of social organisation. In harsher or more constrained environments, particularly those where access to water is limited, cooperation becomes unavoidable. Wells, rivers, and springs act as focal points of convergence, drawing individuals together around shared needs. These sites of necessity become sites of encounter, where repeated interaction begins to dissolve the boundaries of isolation. It is in these spaces that the first social bonds are formed, not through abstract agreement but through practical cooperation. Fire and water play a central role in this process. Fire provides a fixed point of gathering, a place of warmth, protection, and shared presence. Water, essential for survival, creates recurring moments of encounter, bringing individuals into proximity with one another. Around these elements, early humans begin to develop patterns of interaction that extend beyond the family.

Young individuals meet, tasks are shared, and experiences accumulate. These encounters generate not only cooperation but also attraction, curiosity, and emotional exchange. It is within this emerging social field that language begins to take shape. The first languages, according to this account, arise not from the pressures of survival but from the pleasures of interaction. In warm and fertile regions, where life allows for moments of leisure and social engagement, speech emerges as an expression of feeling rather than as a tool of necessity. The voice becomes a medium for the articulation of desire, affection, and shared experience.

These early languages are therefore melodic, expressive, and rich in variation, reflecting the emotional contexts in which they are formed. Sound carries not only information but affect, binding individuals through shared resonance. Language, in this sense, is born from the encounter between bodies and emotions, from the need to express what cannot be reduced to gesture alone. The transition from isolated family speech to communal language marks a further stage in this development. As interactions become more frequent and more complex, the limited systems of communication within small groups prove insufficient. New forms of expression emerge to accommodate broader social relations, gradually stabilising into shared linguistic systems. Yet even as these systems develop, they retain the imprint of their origin in passion. Their structure is shaped less by logical necessity than by the rhythms of interaction, the cadences of emotion, and the demands of shared experience. Over time, as societies become more complex and new forms of organisation emerge, these languages undergo transformation. The expansion of social relations introduces new needs, new distinctions, and new forms of communication. The original expressiveness of language begins to give way to greater structure and precision, reflecting the changing conditions of social life.

Yet the memory of its origin remains embedded within it, a trace of a time when speech was inseparable from feeling, when language emerged not as an instrument of control but as an expression of connection. In this account, the origin of language is inseparable from the origin of society. Both arise from the gradual overcoming of isolation, from the transformation of fear into recognition and of proximity into relation. Language does not precede this transformation but accompanies it, emerging as both a product and a condition of social life. It is born in the spaces where individuals meet, in the shared moments around fire and water, in the encounters that convert strangers into companions. The voice, shaped by these encounters, carries within it the history of this transition, preserving the passage from solitude to society, from silence to speech.

Rousseau, J.-J. (1781) Essay on the Origin of Languages.

Voices of Necessity: The Birth of Harsh Speech

Jean-Jacques Rousseau in 'Essay on the Origin of Languages' argues in Chapter X that the languages of the North arise not from passion but from necessity, shaped by harsh climates that transform speech into an instrument of survival, producing voices that are forceful, precise, and stripped of the melodic expressiveness found in warmer regions. As humanity spreads across diverse environments, its fundamental nature remains constant, yet the sequence and conditions of its development diverge. In the South, where abundance allows for leisure, needs are secondary to passions, and language emerges as their expression. In the North, where scarcity dominates, the relation is reversed: passions themselves are born out of necessity, and language reflects this inversion. Speech becomes not the vehicle of desire but the response to deprivation, not the articulation of feeling but the coordination of survival. The environment imposes a discipline upon both body and voice, selecting for endurance and strength. Those unable to withstand the cold, the

hunger, and the relentless demands of existence disappear, leaving behind a population hardened by necessity. This process does not merely affect physical constitution but extends to perception and expression. Sensory refinement gives way to robustness; subtlety yields to force. The voice, shaped by these conditions, becomes louder, harsher, more insistent.

It is no longer a medium for delicate modulation but a tool capable of cutting through distance and danger. The climate inscribes itself into the very texture of speech, producing a language that mirrors the severity of its environment. In such conditions, life is organised around the imperative of subsistence. The long winters, the brief and uncertain summers, and the constant effort required to extract sustenance from the earth leave little room for contemplation or emotional elaboration. Human relations are governed less by attraction than by dependence, less by shared pleasure than by shared risk. The need for cooperation does not arise from abundance but from vulnerability. Individuals must rely on one another not to enrich life but to preserve it. This shift alters the very function of communication. Gesture, sufficient in more stable and visible environments, proves inadequate in a context where urgency and distance demand immediacy and precision. The voice becomes indispensable, not as an embellishment of interaction but as its condition. The first utterances in such a world are not songs of love or expressions of wonder but calls for assistance, commands, warnings. Language begins with necessity, with the need to signal danger, to request aid, to coordinate action. The phrase that inaugurates speech is not a declaration of feeling but an appeal: help me. From this origin follows the character of northern languages. They are marked by articulation rather than accent, by clarity rather than melody. Sounds are shaped to ensure distinction, to avoid ambiguity, to transmit information efficiently.

The musical qualities that once accompanied speech recede, replaced by a system oriented toward function. Consonants multiply, vowels are constrained, and the flow of speech becomes segmented and controlled. Language loses its fluidity in order to gain precision, sacrificing expressiveness for reliability. This transformation is not merely phonetic but reflects a broader reconfiguration of emotional life. The passions themselves are altered by the environment. In the South, where life allows for repose, passions are expansive, oriented toward pleasure, companionship, and sensuality. In the North, where scarcity and danger are constant, passions take on a defensive character. Irritation, vigilance, and anger become dominant responses, shaped by the need to protect limited resources and to anticipate threats. The emotional register of the community shifts accordingly, and language becomes the medium through which these altered passions are expressed. Speech is no longer designed to seduce or to charm but to assert, to command, to repel. The tone of language reflects this orientation, becoming emphatic, direct, and often abrupt. The social world that emerges under these conditions is one of tension rather than ease. Interactions are charged with the possibility of conflict, and communication must navigate this constant risk. Language, in this context, functions as a means of establishing boundaries as much as of creating connections. It signals strength, conveys authority, and negotiates power. The harshness of speech is not an accident but a necessity, a way of ensuring that words carry weight in a world where misunderstanding can have fatal consequences. The voice must be heard, must be recognised, must be obeyed. This imperative shapes the structure and rhythm of language, producing forms that prioritise impact over elegance.

Yet this harshness does not imply the absence of passion but its transformation. The emotions that animate northern languages are no less intense than those of the South, but they are oriented differently. They arise from the pressures of existence rather than from the pleasures of interaction. Anger replaces tenderness, vigilance replaces ease, and speech becomes the articulation of these states. Language thus reveals the emotional economy of its speakers, encoding within its sounds

the conditions under which it is used. The contrast between northern and southern languages is therefore not simply a difference of style but a difference of origin. One arises from the need to express, the other from the need to survive. One is shaped by abundance, the other by scarcity. These origins leave enduring traces, even as languages evolve and societies transform. The harsh articulations of the North and the melodic flows of the South are not arbitrary features but the sediment of history, the result of long processes of adaptation. In this sense, language is a form of memory, preserving within its structure the conditions of its emergence. The voice, whether soft or harsh, carries within it the imprint of climate, necessity, and human response. It speaks not only to others but of the world from which it arose, revealing in its very sound the forces that shaped it.

Rousseau, J.-J. (1781) Essay on the Origin of Languages.

Echoes of Fire: Why Some Languages Command and Others Explain

Jean-Jacques Rousseau in ‘Essay on the Origin of Languages’ argues in Chapter XI that the enduring differences between languages—particularly those of the South and North—are rooted in their physical and environmental origins, leaving lasting traces that continue to shape how speech persuades, inspires, or merely informs. The distinction is not merely phonetic but civilisational, inscribed in the very function of language. Southern languages, born from passion and abundance, retain a liveliness that manifests in resonance, accent, and expressive force. They are rich in modulation, capable of moving between clarity and obscurity, not as a defect but as a sign of their intensity. Their obscurity is the shadow of their energy; they do not aim merely to be understood but to be felt. Northern languages, by contrast, carry the imprint of necessity. They are articulated rather than accented, precise rather than melodic, clear not through elegance but through vocabulary and structure. Their monotony is not a limitation but an adaptation, a response to the need for unambiguous communication in conditions where misunderstanding carries risk. These differences, though attenuated by centuries of mixture and transformation, persist in modern languages. French, English, and German exemplify this northern inheritance: they are languages of reasoning, suited to discourse, negotiation, and even anger, but less capable of elevating speech into the realm of the sacred or the collective. They excel in analysis but falter in incantation. To address a people, to proclaim a law, or to awaken a multitude requires a different voice, one that carries command not only through meaning but through sound. Such a voice belongs, in Rousseau’s view, to languages like Arabic or Persian, whose tonal richness and rhythmic force allow speech to transcend mere communication and become an event.

The distinction between written and spoken language becomes crucial in this context. Modern European languages often achieve their greatest refinement on the page. They are structured for reading, for silent comprehension, for the orderly unfolding of thought. Their clarity is visual as much as auditory, and their pleasures are those of the intellect. Yet this very quality reveals a loss: what is gained in written precision is lost in spoken vitality. In contrast, the so-called Oriental languages retain their force in speech. Their written forms cannot fully capture their essence because much of their meaning resides in accent, intonation, and rhythm. To encounter them only through text is to encounter a diminished version, stripped of the very qualities that give them life. It is like studying the form of a body without the presence that animates it. The voice, in such languages, is not a mere vehicle for words but an integral part of meaning, inseparable from the message it conveys. This leads to a broader reflection on the difficulty of understanding others. Language is not only a system of signs but an expression of conditions, and to interpret it without reference to those conditions is to misinterpret it entirely. When one attempts to judge another language or culture using the standards of one’s own, the result is not understanding but projection.

The observer sees not the other but a distorted reflection of themselves. This error becomes evident in the misjudgment of texts such as the Koran. Read silently, detached from its original context, it may appear repetitive or simplistic. Yet this judgment ignores the conditions of its delivery: the voice that carried it, the rhythm that shaped it, the collective experience that gave it force. Spoken aloud, with the intensity and conviction of its origin, the same text becomes something entirely different, capable of overwhelming its listeners and transforming their perception. The power lies not solely in the words but in their embodiment, in the union of sound, rhythm, and emotion. This union reveals a dimension of language that modern forms often lack: the capacity to produce what might be called vocal authority. In such cases, speech does not persuade through argument but through presence. It commands not by logic but by resonance, by the ability of the voice to align with the passions of its audience.

This is the source of what Rousseau describes as fanaticism, though the term here does not refer merely to irrational excess but to a form of collective intensity made possible by language. Where speech retains its musical and expressive qualities, it can mobilise individuals, binding them into a shared emotional state. Where these qualities are absent, such effects become impossible. Modern languages, having sacrificed their accents and rhythms, are ill-suited to this form of expression. They produce discourse rather than incantation, explanation rather than inspiration. What remains is often a pale imitation, a performance lacking the vocal force that once gave speech its transformative power. Those who attempt to reproduce such intensity within these languages appear exaggerated or insincere, not because their content is deficient but because the medium no longer supports the message. The voice cannot rise to the level of its intention; it is constrained by the structure of the language itself. Thus, the decline of accent and melody is not merely a phonetic change but a transformation in the role of language within society.

Speech moves from the realm of collective experience to that of individual reasoning, from the shared moment of utterance to the private act of reading. The loss of vocal richness entails a loss of immediacy, of the capacity to affect directly and powerfully. Language becomes more precise but less potent, more accessible but less commanding. The differences between languages, then, are not superficial variations but expressions of deeper historical and environmental processes. They reveal how speech adapts to the conditions of life, how it reflects the balance between necessity and passion, between survival and expression. Even in their modern forms, languages carry the traces of their origins, preserving within their structures the memory of the worlds from which they emerged. Some still echo with the fire of their beginnings, capable of stirring hearts and commanding crowds, while others, refined and disciplined, speak more quietly, addressing the mind rather than the soul.

Rousseau, J.-J. (1781) Essay on the Origin of Languages.

When Speech Sang: The Lost Unity of Voice and Music

Jean-Jacques Rousseau in 'Essay on the Origin of Languages' argues in Chapter XII that music, poetry, and language share a single origin in the passionate voice, emerging together as one unified expressive form before later becoming separated into distinct arts, a separation that marks the decline of language's original vitality. The first human voices did not merely articulate sounds; they expressed emotion through a total engagement of the vocal body. Passion did not divide speech into separate domains but animated it as a whole. Anger shaped the voice into forceful, articulated cries, driven by the tongue and palate, producing sharp and defined sounds. Tenderness, by contrast, softened the voice, drawing from the glottis harmonious tones that flowed with

continuity and resonance. These differences were not technical distinctions but expressions of inner states, where the body itself became the instrument of meaning. Rhythm, melody, and articulation were not added to speech; they were inherent to it, arising simultaneously as the voice responded to emotion. Language, in its origin, was not a system of neutral signs but a living performance, where sound carried both sense and feeling. In this primordial condition, speech was indistinguishable from song. The earliest utterances, formed in shared spaces such as the communal gathering around water sources, were not spoken in the modern sense but sung. The periodicity of rhythm, the modulation of accents, and the resonance of emotion formed a single expressive continuum.

What would later be separated into language, poetry, and music existed as one unified act, a mode of communication in which meaning and affect were inseparable. Words were not stripped of their sonic qualities but enriched by them, and communication operated as an event that engaged both speaker and listener in a shared emotional field. The origin of language is therefore inseparable from the origin of music, not as parallel developments but as aspects of the same phenomenon. The primacy of poetry follows naturally from this unity. Expression begins with emotion, and emotion demands form. Before reason imposes order, the voice seeks rhythm and repetition, giving rise to verse rather than prose. The earliest narratives, exhortations, and even laws were composed in poetic form, not as an aesthetic choice but as a necessity of expression. Rhythm aided memory, melody enhanced impact, and the combination of the two allowed speech to reach beyond immediate perception. Music, in this context, was not an independent art but the modulation of speech itself. The accents of language became the notes of song, and the structure of speech provided the framework for musical composition. Grammar and music were intertwined, not as separate disciplines but as different aspects of a single practice. To speak was to sing, and to sing was to speak. This unity is exemplified in the culture of ancient Greece, where language retained its musical character. The effects attributed to Greek eloquence and music—its capacity to move audiences, to inspire action, to create collective experience—are difficult to comprehend from the standpoint of modern languages.

The loss of this unity has rendered such effects inaccessible, not because the accounts are exaggerated but because the conditions that made them possible no longer exist. Attempts to reconstruct ancient music using modern methods reveal this gap. When fragments of Greek melodies are transcribed into contemporary notation and performed according to modern conventions, they fail to produce the expected impact. The failure lies not in the reconstruction but in the transformation of the medium. Modern musical systems, detached from the tonal and rhythmic properties of the original language, cannot reproduce the conditions under which the music was created. What is lost is not merely a style but a mode of expression, a way of integrating sound and meaning that has no equivalent in contemporary forms. This misunderstanding extends to the tools used to analyse and reproduce ancient expression. Modern observers, equipped with concepts and instruments shaped by a different linguistic and musical tradition, attempt to interpret the past through frameworks that distort its nature. The analogy of throwing musket balls by hand while imitating gunfire captures this error. The external form may be imitated, but the internal mechanism is absent. The power of ancient music and eloquence did not reside in isolated elements—notes, rhythms, or words—but in their integration within a living system. To extract these elements and reassemble them according to modern principles is to produce something fundamentally different, a shadow of the original rather than its continuation. The separation of language, music, and poetry marks a turning point in the history of expression. As societies evolve and language becomes more structured, the unity of these forms dissolves. Speech becomes more precise but less melodic, more analytical but less affective.

Music, detached from language, develops its own systems, increasingly abstract and technical. Poetry, caught between the two, retains traces of its origin but is no longer the primary mode of communication. The result is a fragmentation of expression, where each domain operates according to its own logic, losing the integrative power that once defined them. Language, stripped of its musical dimension, becomes a vehicle for ideas rather than for experiences. It conveys meaning but struggles to evoke the full range of human feeling. This transformation reflects a broader shift from a world governed by passion to one governed by reason. The voice, once an instrument of emotion, becomes a tool of communication, its expressive potential constrained by the demands of clarity and structure. The loss of melody is thus not merely an aesthetic change but a reconfiguration of the relationship between language and human experience. In recognising this loss, one also recognises the distance that separates modern speech from its origins. The voice no longer carries the same weight, no longer unites communities in the same way, no longer transforms words into events. Yet traces of this original unity persist, in the rhythms of poetry, in the cadences of speech, in the lingering desire for a language that does more than inform. These traces suggest that the origin of language as song is not entirely erased but continues to resonate beneath the surface of modern forms, a reminder of a time when to speak was to sing and to be heard was to be moved.

Rousseau, J.-J. (1781) Essay on the Origin of Languages.

Melody as Meaning: Why Music Speaks and Sound Does Not

Jean-Jacques Rousseau in 'Essay on the Origin of Languages' argues in Chapter XIII that melody, not harmony, constitutes the true expressive core of music, just as design—not colour—gives painting its emotional force, revealing that sound alone cannot move the human soul unless it becomes a sign shaped by imitation and meaning. Human beings are indeed affected by sensory impressions, yet it is a profound error to reduce these effects to their physical causes alone. Sensation does not merely strike the body; it also resonates within the realm of imagination, where it becomes a sign capable of evoking passions. The mistake lies in confusing the medium with the message, the material stimulus with the form that gives it significance. In painting, colours may delight the eye, but they do not constitute the essence of the work. It is the arrangement, the outline, the design that gives shape to emotion, transforming visual elements into a meaningful representation. Even stripped of colour, a simple engraving can move the viewer, because its power lies not in its pigments but in its form. In music, this distinction reappears with even greater clarity. Melody performs the role that design fulfils in painting. It is the structuring principle that organises sound into meaning, guiding the listener through an experience that transcends mere auditory pleasure. Harmony, like colour, enriches the surface, adding depth and texture, but it does not create the emotional core. To reduce music to harmony or to the physics of sound is to misunderstand its nature entirely.

Sound, taken in isolation, is no more expressive than colour without form; it is the shaping of sound into melody that transforms it into an art capable of affecting the soul. Melody is not a simple sequence of tones but a configuration that carries intention, direction, and emotional contour. It is the movement of sound toward meaning, the articulation of feeling through temporal form. Rousseau illustrates this misunderstanding through a parable of a society that knows only colour but not design. Such a society, mastering the blending of hues, would believe it had grasped the essence of painting. Confronted with works that evoke deep emotion, its scholars would search for the secret in the colours themselves, attempting to explain how certain shades produce specific feelings. Their experiments, however refined, would fail, because they ignore the principle that

gives painting its power. Unable to recognise the role of design, they would dismiss attempts to introduce form as primitive or misguided. Even if one among them were to sketch a figure, it would appear insignificant compared to their elaborate colour compositions. Only gradually, perhaps through accident, might they discover that it is not colour but structure that gives painting its expressive force. Yet even then, the temptation would remain to reduce this discovery to a system, to translate design into measurable relations, thereby transforming art into a branch of physics. This parable exposes the parallel error in the understanding of music.

When musicians or theorists attribute the emotional effects of music to harmony or acoustic principles, they replicate the mistake of the colour-obsessed painters. They focus on the measurable aspects of sound—the frequencies, the intervals, the combinations—while overlooking the element that gives these sounds meaning. In doing so, they strip music of its expressive core, reducing it to a technical system devoid of emotional depth. Such an approach may yield knowledge about sound, but it cannot explain why music moves us, why it speaks to something beyond the senses. The answer lies in imitation, the capacity of art to represent and evoke experiences. Both painting and music belong to the realm of the fine arts because they imitate, not in the sense of copying external reality, but in the sense of recreating the structures of feeling. In painting, this is achieved through design, which organises visual elements into forms that resonate with human perception and emotion. In music, it is achieved through melody, which shapes sound into patterns that mirror the dynamics of inner experience. Melody does not merely please the ear; it communicates, it signifies, it brings into presence something that is not physically there. This capacity for imitation distinguishes art from mere sensation. Without it, painting would be nothing more than coloured surfaces, and music nothing more than organised noise. The role of melody, then, is not ornamental but foundational.

It is the principle that transforms sound into expression, that allows music to operate as a language of feeling. Through its contours, its rises and falls, its tensions and resolutions, melody creates a space in which the listener can recognise and experience emotion. It does not describe feelings in the abstract but enacts them, guiding the listener through a temporal unfolding that parallels the movement of passion itself. In this sense, melody is inseparable from the origins of language, where sound was already shaped by emotion and used to communicate states of being rather than merely to denote objects. The decline of melody's centrality in modern music reflects a broader shift in the understanding of art. As attention turns toward harmony, structure, and technical complexity, the expressive function of music risks being overshadowed. The focus moves from what music conveys to how it is constructed, from its capacity to imitate experience to its internal relations. This shift parallels the transformation of language, where the emphasis on clarity and structure diminishes the role of accent and intonation. In both cases, the result is a form that is more precise but less expressive, more analysable but less affecting. Yet the persistence of melody, even within these transformed contexts, suggests that its role cannot be entirely displaced. It remains the element through which music speaks, through which it connects with the listener on a level that transcends mere sensation.

It is the trace of an origin where sound and meaning were not yet separated, where to hear was to feel, and to feel was to understand. In recognising melody as the soul of music, one recognises the continuity between language and art, between the voice that speaks and the voice that sings, both rooted in the same impulse to transform sensation into expression.

Rousseau, J.-J. (1781) Essay on the Origin of Languages.

Harmony Without a Voice: The Limits of Pure Sound

Jean-Jacques Rousseau in 'Essay on the Origin of Languages' argues in Chapter XIV that harmony, despite its mathematical beauty and physical pleasure, cannot by itself move the human soul, because it lacks the imitative and expressive power of melody, revealing that sound becomes meaningful only when it carries the inflections of human passion. The beauty of sound, in its most immediate sense, belongs to nature. It arises from the vibrations of bodies, from the resonance of air, from the interplay of tones and their overtones. This phenomenon produces a sensory pleasure that is universal, grounded in the shared physiology of hearing. Yet this pleasure remains at the level of sensation, confined to the ear, unless it is animated by something more. Sound alone, however refined, does not suffice to produce the deeper delight that engages the human spirit. Without the structuring force of melody, which gives direction and meaning to sound, harmony remains superficial, incapable of transcending its physical basis. The listener may perceive it, may even enjoy it, but does not truly experience it as expression. This limitation becomes evident when one encounters unfamiliar music.

Just as a language without known words fails to communicate, a melody rooted in an unfamiliar system of inflections may leave the listener unmoved. The sounds are present, but their significance is inaccessible. The same applies, with even greater force, to harmony. Unlike melody, which draws upon the natural inflections of the voice, harmony depends on conventions that must be learned. Its relations are not immediately given to perception but require training and habituation. To an unaccustomed ear, harmonic combinations may appear as indistinct or even unpleasant, lacking the clarity and immediacy of unison. The claim that harmony is naturally intelligible, that it resonates instinctively with the listener, proves untenable. Experience shows that what is not learned is not heard as meaningful. In this sense, harmony is less universal than melody, more dependent on cultural formation than on innate response. Rousseau's critique extends further, questioning the very attempt to improve upon nature through harmonic complexity. The natural state of sound, in unison, represents a balance that is disrupted when harmony manipulates its proportions. By emphasising certain overtones and suppressing others, harmony introduces an artificial ordering that distances sound from its origin. The pursuit of refinement becomes a form of distortion, a departure from the simplicity that characterises natural expression.

What is presented as advancement may in fact be a loss, replacing immediacy with calculation, spontaneity with system. The ear, attuned to the natural voice, recognises in unison a purity that harmony cannot replicate. This recognition underscores the distinction between what is given and what is constructed, between the directness of nature and the mediation of artifice. The problem of harmony becomes even more apparent when considered from the perspective of imitation. If music is to function as an art, it must do more than produce pleasing sounds; it must represent, evoke, and communicate. The question then arises: what does harmony imitate? Unlike melody, which mirrors the contours of speech and the dynamics of emotion, harmony lacks a clear referent. Its relations are abstract, its effects indirect. It does not correspond to specific passions or experiences but operates at a level removed from lived reality. The listener may perceive patterns, may appreciate structure, but does not encounter the immediacy of expression. Harmony, in this sense, remains external to the emotional life it seeks to engage, unable to bridge the gap between sound and meaning. Melody, by contrast, achieves this connection precisely because it is rooted in the human voice. It imitates the accents of speech, reproducing the variations of tone, rhythm, and intensity that accompany emotion. In doing so, it transforms sound into a form of discourse, a language that communicates without the need for words. Grief, joy, anger, tenderness—these are

not abstract categories but lived experiences, and melody captures their movement, their temporal unfolding.

It speaks directly to the listener, bypassing the need for translation, because it draws upon structures that are already familiar. The voice, as the original medium of language, provides the template for musical expression, and melody remains faithful to this origin. It is this fidelity that gives music its power, allowing it to articulate what cannot be said. Harmony, when introduced into this framework, often acts as a constraint rather than an enhancement. By imposing fixed relations and limiting the range of possible inflections, it restricts the freedom of melody. The fluidity of expression, the subtle variations that give speech its vitality, are replaced by predetermined intervals and patterns. The result is a tension between structure and expression, where the former risks suppressing the latter. In cultures where language itself has lost its musical inflection, this tension becomes more pronounced. The attempt to express serious passions through song may appear artificial, even absurd, because the connection between speech and melody has been weakened. Music, detached from its linguistic roots, struggles to recover the immediacy it once possessed. The limitations of harmony are further illustrated in attempts to imitate natural sounds. Thunder, wind, rushing water—these phenomena may be approximated through complex combinations of tones, but such imitation remains superficial. Noise, however elaborate, does not become meaningful simply by being organised. Without a connection to human experience, without the capacity to signify, it fails to engage the listener. True imitation requires transformation, the translation of raw sound into a form that resonates with the listener's inner world.

It is not the reproduction of noise but its reconfiguration into expression. To imitate frogs, for example, is not to replicate their croaking but to render their presence in a way that can be perceived as song, as something that carries meaning. This transformation marks the boundary between nature and art. Music, as an art, must elevate sound beyond its physical origin, shaping it into a medium of communication. Without this elevation, it remains at the level of sensation, incapable of leaving a lasting impression. The listener hears but does not retain, perceives but does not respond. Expression requires more than arrangement; it requires intention, direction, and the capacity to evoke. Melody fulfils this requirement by aligning sound with the structures of human experience, while harmony, when isolated, falls short. In recognising this distinction, one sees that the essence of music lies not in its material components but in its form as expression. Sound becomes music only when it speaks, when it carries within it the traces of the voice, the inflections of emotion, the movement of meaning. Harmony, for all its complexity, cannot replace this function. It may support, may enrich, but cannot constitute the core. The soul of music resides in melody, in the capacity of sound to become language once more, to return to its origin in the expressive voice.

Rousseau, J.-J. (1781) Essay on the Origin of Languages.

The Ear That Thinks: Music Beyond Sensation

Jean-Jacques Rousseau in 'Essay on the Origin of Languages' argues in Chapter XV that the most powerful effects of music arise not from physical vibrations alone but from the moral and interpretive meanings attached to sound, revealing that sensation becomes emotion only when it is mediated by imagination and recognition. The initial error, he suggests, lies in treating sound as a purely mechanical disturbance of the nerves, as though melody were nothing more than a refined form of vibration. Such a view reduces music to physics and strips it of its most essential quality:

its capacity to signify. Melody does not merely strike the ear; it speaks to the mind. It is not the sound itself that moves us, but what the sound represents—human affections, intentions, and emotional states that are recognised, reconstructed, and internalised by the listener. Without this representational function, sound remains inert, incapable of producing anything beyond fleeting sensory pleasure. The distinction between physical and moral impressions becomes evident when observing how both humans and animals respond to sound. A dog's bark attracts another not because of the acoustic pattern alone, but because of what it signifies—a presence, a call, a potential interaction. A cat reacts to a sound it interprets as a fellow cat's call, becoming agitated or attentive, yet loses all interest the moment the illusion is broken.

The reaction is thus not tied to the sound as a physical stimulus, but to its interpreted meaning. Once the meaning collapses, so too does the emotional response. This demonstrates that perception is never purely sensory; it is always mediated by interpretation, by a form of recognition that assigns significance to what is heard. If sound operated solely through physical mechanisms, its effects would be uniform across individuals and cultures. Yet experience contradicts this assumption. What moves one listener profoundly may leave another entirely indifferent. A composition revered in one tradition may be perceived as mere noise in another. This divergence cannot be explained by differences in physiology, for the human auditory apparatus remains fundamentally the same. The difference lies instead in familiarity, in the learned associations that connect sound to meaning. Music is not a universal language in the sense of immediate intelligibility; it requires a shared framework of interpretation. Without this framework, the listener hears but does not understand, perceives but does not respond. The example of the tarantula cure, often invoked as evidence of the physical power of music, in fact reveals the opposite. The effectiveness of the music depends not on its intrinsic acoustic properties but on its cultural relevance to the patient. An Italian responds to Italian melodies, a Turk to Turkish ones. The cure lies not in the sound itself but in the recognition of the sound, in the way it activates familiar patterns of expectation and response. The mind prepares the body, predisposing it to react, and the music serves as a trigger for this process. In this sense, the nervous system does not operate independently of meaning; it is guided by it. The moral dimension of sensation extends beyond hearing to other senses as well. The same physical stimulus can produce radically different emotional responses depending on the interpretation attached to it. A touch that is believed to come from a living being evokes warmth, intimacy, and emotional engagement, while the same touch, perceived as inanimate, becomes neutral or even insignificant.

The sensation itself does not change; what changes is the meaning attributed to it. This demonstrates that perception is inseparable from belief, that the senses do not simply register external stimuli but participate in a process of interpretation that shapes experience. Taste appears as an exception, operating at a purely physical level, yet this exception only reinforces the rule. Precisely because taste lacks this moral dimension, it remains confined to immediate pleasure and is often associated with the most basic forms of gratification. Where meaning is absent, depth is also absent. The higher senses—hearing and sight—derive their power from their capacity to signify, to evoke ideas and emotions beyond the immediate stimulus. This capacity transforms sensation into experience, elevating it from the level of the body to that of the mind. To understand the true power of music, one must therefore distinguish between sound as a physical phenomenon and sound as a sign. Colors and sounds, taken in isolation, possess limited expressive potential. They can please, but they cannot move. It is only when they function as representations—when they point beyond themselves to something else—that they acquire emotional force. A sequence of chords may amuse the ear, but without a connection to feeling or memory, it cannot sustain attention. Music that lacks expressive depth quickly becomes tiresome, for it offers nothing to the

imagination. The ear alone does not generate pleasure; it is the heart, interpreting and responding, that gives sound its meaning. This insight casts doubt on attempts to reduce music to a science of acoustics. While such approaches may account for the physical properties of sound, they fail to explain its emotional impact. The essence of music lies not in the arrangement of frequencies but in the relationship between sound and meaning. Melody, as the primary vehicle of this relationship, carries within it the traces of human expression, the inflections of voice, the patterns of emotional life. It is through melody that music becomes intelligible, that it speaks rather than merely sounds. Without this dimension, music collapses into noise, into a sequence of stimuli that lacks coherence and purpose.

The danger of a purely physical understanding of sensation is not merely theoretical but cultural. When all experiences are reduced to mechanical processes, the moral and imaginative dimensions of life are diminished. Art loses its depth, becoming a matter of technique rather than expression, and human experience itself is impoverished. The capacity to be moved, to respond to signs and meanings, is replaced by a focus on measurable effects. In such a context, both taste and virtue decline, for they depend on the ability to perceive beyond the surface, to recognise the significance embedded in appearances. Music, in its true form, resists this reduction. It reminds us that sensation is never purely physical, that it is always entangled with meaning, memory, and imagination. The liveliest sensations are those that engage this entanglement, that act not only on the body but on the mind. They do not simply occur; they are understood. And it is in this understanding that their power resides.

Rousseau, J.-J. (1781) Essay on the Origin of Languages.

Time That Speaks: Sound Against the Illusion of Color

Jean-Jacques Rousseau in 'Essay on the Origin of Languages' argues in Chapter XVI that the frequent comparison between colors and sounds rests on a false analogy, one that confuses measurable similarity with experiential identity and ultimately distorts the nature of the arts. The temptation to equate color and sound arises from their shared susceptibility to numerical analysis. Both can be described through ratios, frequencies, and proportions, and this formal resemblance has led thinkers to imagine a deeper unity between them. Yet this unity belongs only to abstraction, to the domain of reason, not to lived perception. By mistaking mathematical analogy for sensory equivalence, one reduces art to calculation and overlooks the fundamentally different ways in which the senses operate. The result is a series of conceptual absurdities, such as the idea that music could be produced through colors, or that painting could replicate the temporal unfolding of sound. These confusions reveal not insight but a failure to grasp the distinct logics of perception. The most decisive difference lies in the opposition between permanence and succession. Colors are given all at once. They occupy space, spread across surfaces, and present themselves to the eye in a single, simultaneous act. One can linger on them, revisit them, contemplate them without temporal pressure. Their presence is stable, enduring, and available for repeated inspection. Sound, by contrast, exists only in time. It unfolds, passes, disappears. It cannot be grasped in its entirety at once but must be followed, anticipated, remembered. To hear is to move with the object, to participate in its becoming and its vanishing. Where the eye surveys, the ear traverses. This difference is not superficial but structural. It defines the very conditions under which each sense operates.

Painting belongs to space; music belongs to time. To confuse these domains is to misunderstand both. Colors possess an intrinsic stability. Yellow remains yellow regardless of its surroundings.

Its identity is not dependent on sequence or relation but is given immediately. Sounds, however, are essentially relational. A tone has meaning only in relation to other tones, within a system that unfolds over time. Its identity is not fixed but contextual, defined by its position within a sequence. This relational character makes sound inherently dynamic, dependent on progression and change. Unlike colors, which can exist independently of human action, sounds require movement, vibration, and, ultimately, a perceiving subject. They are events rather than objects, occurrences rather than presences. This temporal and relational nature places music closer to human activity, to artifice and expression, while painting, grounded in the constancy of light and surface, appears more closely aligned with the natural world. Yet it is precisely this dependence on time and relation that grants music its unique expressive power. Because sound unfolds, it can imitate the movements of life. It can suggest intention, emotion, and presence. Every musical phrase implies a gesture, a voice, a living source. Even in instrumental music, where no literal voice is present, the listener perceives something akin to speech, an articulation that seems to come from a sentient being. Painting can depict absence, silence, desolation; it can represent a world devoid of life. Music cannot. Even the most austere composition carries within it the trace of animation, the suggestion of a living force behind the sound. In this sense, music always implies community, always gestures toward another consciousness. It is never entirely solitary. This quality allows music to transcend the limits of the visible.

While painting is bound to what can be shown, music can evoke what cannot be seen: the calm of night, the vastness of a landscape, the stillness of silence. It does not reproduce these phenomena directly but recreates the internal states they produce. A sustained tone can suggest quiet; a gentle rhythm can evoke rest; a sudden crescendo can recall the violence of a storm. These are not imitations in the literal sense but correspondences, translations of external experience into internal movement. Music does not show the world; it makes one feel it. It operates not by representation but by resonance, aligning the listener's inner state with the imagined scene. This capacity to evoke across sensory boundaries further distinguishes sound from color. A color cannot suggest a sound without mediation; a sound can suggest a color, a movement, a sensation. The ear, in this sense, becomes a site of synthesis, where different modes of experience converge. A monotonous rhythm may lull one into a state akin to silence, only to reveal its presence when it stops. The absence of variation becomes itself a form of expression. Similarly, the suggestion of natural phenomena—wind, water, fire—does not depend on literal imitation but on the evocation of their effects. Music recreates not the object but the experience of the object. It engages the listener in a process of imaginative reconstruction, where sound becomes a vehicle for feeling rather than a direct representation of reality. The false analogy between colors and sounds thus obscures what is most essential in both. It reduces painting to a kind of frozen music and music to a kind of moving painting, ignoring the distinct conditions that give each its power. Colors belong to the world as it appears; sounds belong to the world as it unfolds.

Painting fixes, music flows. Painting offers presence; music offers passage. To understand this difference is to recognise that the arts are not interchangeable systems but distinct modes of engaging with reality, each rooted in the specific capacities of the senses. The error of analogy is therefore not merely theoretical but practical. It leads to a misunderstanding of artistic expression, to attempts to impose one logic upon another, and to a neglect of what makes each art form unique. True understanding requires respecting the boundaries between the senses while recognising the ways in which they can resonate with one another. Music does not need to become visible to be meaningful; painting does not need to become audible to be expressive. Each speaks in its own language, and it is in the integrity of these languages that their power resides. Sound, in its fleeting, temporal nature, carries within it a form of life that color, in its stability, cannot replicate. It is this

life, this movement, that allows music to enter the domain of the human, to reflect not just the world but the experience of being in it.

Rousseau, J.-J. (1781) Essay on the Origin of Languages.

Time That Speaks: Sound Against the Illusion of Color

Jean-Jacques Rousseau in 'Essay on the Origin of Languages' argues in Chapter XVI that the frequent comparison between colors and sounds rests on a false analogy, one that confuses measurable similarity with experiential identity and ultimately distorts the nature of the arts. The temptation to equate color and sound arises from their shared susceptibility to numerical analysis. Both can be described through ratios, frequencies, and proportions, and this formal resemblance has led thinkers to imagine a deeper unity between them. Yet this unity belongs only to abstraction, to the domain of reason, not to lived perception. By mistaking mathematical analogy for sensory equivalence, one reduces art to calculation and overlooks the fundamentally different ways in which the senses operate. The result is a series of conceptual absurdities, such as the idea that music could be produced through colors, or that painting could replicate the temporal unfolding of sound. These confusions reveal not insight but a failure to grasp the distinct logics of perception. The most decisive difference lies in the opposition between permanence and succession. Colors are given all at once. They occupy space, spread across surfaces, and present themselves to the eye in a single, simultaneous act. One can linger on them, revisit them, contemplate them without temporal pressure.

Their presence is stable, enduring, and available for repeated inspection. Sound, by contrast, exists only in time. It unfolds, passes, disappears. It cannot be grasped in its entirety at once but must be followed, anticipated, remembered. To hear is to move with the object, to participate in its becoming and its vanishing. Where the eye surveys, the ear traverses. This difference is not superficial but structural. It defines the very conditions under which each sense operates. Painting belongs to space; music belongs to time. To confuse these domains is to misunderstand both. Colors possess an intrinsic stability. Yellow remains yellow regardless of its surroundings. Its identity is not dependent on sequence or relation but is given immediately. Sounds, however, are essentially relational. A tone has meaning only in relation to other tones, within a system that unfolds over time. Its identity is not fixed but contextual, defined by its position within a sequence. This relational character makes sound inherently dynamic, dependent on progression and change. Unlike colors, which can exist independently of human action, sounds require movement, vibration, and, ultimately, a perceiving subject. They are events rather than objects, occurrences rather than presences. This temporal and relational nature places music closer to human activity, to artifice and expression, while painting, grounded in the constancy of light and surface, appears more closely aligned with the natural world. Yet it is precisely this dependence on time and relation that grants music its unique expressive power.

Because sound unfolds, it can imitate the movements of life. It can suggest intention, emotion, and presence. Every musical phrase implies a gesture, a voice, a living source. Even in instrumental music, where no literal voice is present, the listener perceives something akin to speech, an articulation that seems to come from a sentient being. Painting can depict absence, silence, desolation; it can represent a world devoid of life. Music cannot. Even the most austere composition carries within it the trace of animation, the suggestion of a living force behind the sound. In this sense, music always implies community, always gestures toward another consciousness. It is never entirely solitary. This quality allows music to transcend the limits of the

visible. While painting is bound to what can be shown, music can evoke what cannot be seen: the calm of night, the vastness of a landscape, the stillness of silence. It does not reproduce these phenomena directly but recreates the internal states they produce. A sustained tone can suggest quiet; a gentle rhythm can evoke rest; a sudden crescendo can recall the violence of a storm. These are not imitations in the literal sense but correspondences, translations of external experience into internal movement. Music does not show the world; it makes one feel it. It operates not by representation but by resonance, aligning the listener's inner state with the imagined scene. This capacity to evoke across sensory boundaries further distinguishes sound from color. A color cannot suggest a sound without mediation; a sound can suggest a color, a movement, a sensation. The ear, in this sense, becomes a site of synthesis, where different modes of experience converge. A monotonous rhythm may lull one into a state akin to silence, only to reveal its presence when it stops. The absence of variation becomes itself a form of expression. Similarly, the suggestion of natural phenomena—wind, water, fire—does not depend on literal imitation but on the evocation of their effects. Music recreates not the object but the experience of the object. It engages the listener in a process of imaginative reconstruction, where sound becomes a vehicle for feeling rather than a direct representation of reality. The false analogy between colors and sounds thus obscures what is most essential in both. It reduces painting to a kind of frozen music and music to a kind of moving painting, ignoring the distinct conditions that give each its power.

Colors belong to the world as it appears; sounds belong to the world as it unfolds. Painting fixes, music flows. Painting offers presence; music offers passage. To understand this difference is to recognise that the arts are not interchangeable systems but distinct modes of engaging with reality, each rooted in the specific capacities of the senses. The error of analogy is therefore not merely theoretical but practical. It leads to a misunderstanding of artistic expression, to attempts to impose one logic upon another, and to a neglect of what makes each art form unique. True understanding requires respecting the boundaries between the senses while recognising the ways in which they can resonate with one another. Music does not need to become visible to be meaningful; painting does not need to become audible to be expressive. Each speaks in its own language, and it is in the integrity of these languages that their power resides. Sound, in its fleeting, temporal nature, carries within it a form of life that color, in its stability, cannot replicate. It is this life, this movement, that allows music to enter the domain of the human, to reflect not just the world but the experience of being in it.

Rousseau, J.-J. (1781) Essay on the Origin of Languages.

Two Systems, Two Souls: Why Greek Music Cannot Be Ours

Jean-Jacques Rousseau in 'Essay on the Origin of Languages' argues in Chapter XVIII that the musical system of the Greeks bears no real relation to modern harmonic music, and that any attempt to equate the two stems from a fundamental misunderstanding of both language and sound. The divergence between these systems is not accidental but arises from deeper transformations in the nature of language itself. As speech lost its accentual and melodic character, music followed suit, shifting from an art rooted in vocal expression to one structured by harmonic calculation. What appears today as a universal musical logic is in fact a historical construction, one that cannot be retroactively imposed upon cultures whose linguistic and expressive conditions were entirely different. The modern system of harmony, far from being a natural evolution, is presented as a relatively recent invention, alien to the sensibility of the ancient Greeks. It is built upon principles that presuppose a particular organisation of sound—tempered intervals, harmonic stacking, and the centrality of chords—that were absent from Greek practice. To read these principles into Greek

music is not an act of interpretation but of projection, an imposition of contemporary categories onto a fundamentally different aesthetic world. Such projections reveal more about the assumptions of the interpreter than about the object of study, reducing historical difference to apparent continuity and thereby obscuring the originality of the past. The Greek system, structured around tetrachords, operates according to a logic distinct from the octave-based framework of modern music. While both systems involve repetition and pattern, their underlying principles diverge.

The repetition of tetrachords in Greek melody does not serve the same function as the repetition of octaves in harmonic composition. It does not generate vertical combinations of sound but unfolds horizontally, following the contour of the voice rather than the architecture of chords. This difference is not merely technical but expressive. Greek music is oriented toward the voice, toward the modulation of speech, toward the inflections that carry meaning and emotion. Modern music, by contrast, increasingly abstracts itself from the voice, constructing relations between sounds that exist independently of vocal expression. The absence of thirds and sixths as consonances in the Greek system further illustrates this divergence. These intervals, central to modern harmony, depend on a system of tuning that the Greeks did not possess. Without tempered intervals, the relationships that make harmony possible in the modern sense could not be stabilised. The Greek ear, attuned to different proportions, did not recognise these intervals as consonant, and therefore did not build a musical system upon them. What appears to modern listeners as a limitation is in fact a difference in orientation. Greek music does not lack harmony; it simply does not seek it. Its coherence lies elsewhere—in the continuity of melodic line, in the expressive modulation of pitch, in the alignment of sound with speech. This alignment is crucial. Greek music cannot be understood apart from the nature of the

Greek language, which itself was rich in accent and intonation. The voice, in speaking, already carried a musical dimension, and music extended rather than replaced this dimension. The intervals chosen, the progressions favoured, the structures employed—all reflect the demands of vocal expression. Large leaps that would strain the voice are avoided; smaller intervals, capable of subtle inflection, are cultivated. The system emerges not from abstract theory but from practical engagement with the capacities of the human voice. It is, in this sense, an organic system, shaped by use rather than imposed by design. The contrast with modern music, shaped by instruments and notation, becomes evident. Where Greek music follows the voice, modern music often follows the instrument. Where Greek music adapts to the natural inflections of speech, modern music imposes a grid of fixed intervals. Where Greek music privileges expression, modern music privileges structure. These differences are not hierarchical but categorical. One system cannot be measured by the standards of the other without distortion. To judge Greek music by harmonic criteria is to misunderstand its purpose, just as to judge modern harmony by the standards of vocal expression would be to ignore its achievements. The temptation to assimilate the two systems reflects a broader tendency to universalise one's own forms of knowledge. By assuming that harmony is a natural and necessary development, one overlooks the historical conditions that produced it. By treating Greek music as an incomplete version of modern music, one denies its autonomy and reduces its complexity to absence.

Yet the Greek system, precisely in its difference, reveals another possibility of musical organisation, one in which sound remains closely tied to language, to emotion, and to the immediacy of expression. Recognising this difference does not diminish modern music but situates it within a broader history of forms, each shaped by its own conditions and constraints. The lesson is not that one system is superior to the other, but that each embodies a distinct relationship

between sound, language, and human experience. To understand music, one must therefore attend not only to its structures but to the world in which those structures arise. Only then can one avoid the error of false comparison and begin to appreciate the plurality of musical expression, where each system speaks in its own voice and according to its own logic.

Rousseau, J.-J. (1781) Essay on the Origin of Languages.

Voices of Power: When Language Loses the Crowd

Jean-Jacques Rousseau in ‘Essay on the Origin of Languages’ argues in Chapter XX that the character of a language is inseparable from the form of government under which it develops, revealing that political power reshapes not only institutions but the very conditions of speech itself. Language does not evolve in isolation; it follows the transformations of human needs, and these needs are structured by the organisation of society. Where persuasion once stood at the centre of public life, eloquence flourished as a necessity. To govern meant to convince, to move, to address a people gathered in shared space. Speech was not an accessory to power but its instrument. In such conditions, language acquired amplitude, rhythm, and sonority, qualities that allowed it to travel across open air, to reach the multitude, to bind individuals into a collective audience. The voice, in this context, was a political force, and language was shaped to sustain it. As political structures change, however, the function of language changes with them. When authority no longer depends on persuasion but on command, the need for eloquence diminishes. A single decree replaces the extended argument; the formula ‘such is my pleasure’ renders discourse unnecessary. Power, no longer negotiated through speech, is imposed through force or administered through economic mechanisms. In this transformation, language loses its central role in governance. It becomes secondary, ornamental, or purely formal, retained in rituals that no longer require belief. Sermons, proclamations, and official statements persist, but they function less as acts of communication than as performances of authority. They are spoken not to persuade but to signify that power has spoken.

The disappearance of public assemblies marks a decisive moment in this process. Where people once gathered to hear and respond, they are now dispersed, managed, and isolated. The crowd, as a listening body, dissolves, and with it the conditions that made public speech meaningful. Without an audience capable of collective response, language loses its resonance. It no longer needs to carry across space, to project itself outward, to engage a shared sensibility. Instead, it retreats into smaller, controlled environments, adapting to spaces where visibility and audibility are limited. The political logic of dispersal—of preventing gatherings, of minimising collective presence—translates directly into a linguistic transformation. A language suited to whispers replaces one suited to proclamation. This shift is not merely quantitative but qualitative. Languages that emerge in conditions of liberty are marked by their capacity to be heard. They are structured to support the voice, to amplify it, to sustain it across distance. Their rhythm and intonation are not aesthetic additions but functional necessities, enabling speech to operate in public space. Such languages carry within them the memory of assemblies, of debates, of shared attention. They are, in a sense, collective languages, shaped by the presence of others. By contrast, languages that develop under conditions of control tend toward compression and restraint. They do not need to reach the multitude; they need only to circulate within confined channels of authority. Their clarity serves administration rather than persuasion, their precision replaces their force. They become instruments of transmission rather than vehicles of engagement. The example of modern urban space illustrates this transformation vividly.

A speaker addressing a crowd in an open square finds that his words dissolve into noise, unable to gather attention or sustain coherence. The language itself seems inadequate to the task, lacking the qualities that would allow it to project and organise collective listening. By contrast, in earlier societies, the voice could command space. Orators addressed assemblies without technological amplification, relying on the intrinsic properties of language—its cadence, its accent, its structure—to carry meaning. The difference is not simply one of technique but of linguistic form. The language was made for the crowd, and the crowd, in turn, shaped the language. This reciprocal relation between language and public life reveals a deeper truth: a language that cannot be spoken to a people cannot sustain a free people. When speech loses its public dimension, when it can no longer organise collective attention, it ceases to function as a medium of political life. It becomes servile, not because it is imposed from above, but because it no longer enables participation from below. The erosion of public speech thus parallels the erosion of liberty. Where language cannot gather, liberty cannot emerge; where language cannot be heard, power cannot be contested. To study a language, therefore, is to study a form of life. Its sounds, structures, and uses reflect the conditions under which it operates, the relations it sustains, the possibilities it enables or forecloses. A language carries within it the imprint of its political environment, encoding not only meanings but modes of interaction. It reveals whether a society speaks to itself or is spoken to, whether it gathers or disperses, whether it persuades or commands. In this sense, language becomes a diagnostic of power, a medium through which the organisation of society can be read.

The decline of eloquence is not merely an aesthetic loss but a political symptom. It signals the displacement of persuasion by force, of dialogue by decree, of presence by absence. And with this displacement, language itself changes, adapting to a world where it is no longer central but peripheral, no longer a force but a residue. To recover the power of language would therefore require more than stylistic reform; it would require a transformation of the conditions under which speech takes place. Only where people gather, listen, and respond can language regain its amplitude, its resonance, its capacity to act. Until then, it remains confined, reduced to a function it once transcended, a voice that speaks but is no longer heard.

Rousseau, J.-J. (1781) Essay on the Origin of Languages.

The Written Tongue and the Silent Voice: When Pronunciation Yields to the Page

Jean-Jacques Rousseau in ‘Essay on the Origin of Languages’ argues in Chapter XXI that pronunciation reveals the deepest tension within language—the gradual subordination of living speech to the rigid authority of writing—and that this inversion distorts not only sound but the very nature of communication. To speak well is not to embellish or to perform but to be heard clearly, to carry meaning across distance without dependence on theatrical inflection or exaggerated force. True pronunciation lies in the capacity to sustain intelligibility through constancy of tone, through a balance where prosody replaces volume and accent substitutes for gesture. The voice, in its most effective form, does not strain but travels; it does not fluctuate wildly but maintains coherence, allowing the listener to follow without effort. Yet this ideal is rarely achieved, for pronunciation is not governed by principles alone but by habit, fashion, and imitation. It changes as clothing changes, shaped by social preference rather than necessity, and thus loses the stability required for a shared standard. In this instability, language begins to fragment, not at the level of grammar or vocabulary, but at the level of sound itself. The examples of shifting pronunciations—where words alter their endings, soften their consonants, or absorb regional inflections—illustrate a deeper process. Speech, though rooted in convention, remains fluid, adapting continuously to usage.

Writing, by contrast, resists this movement. It fixes words in a stable form, preserving older pronunciations long after they have disappeared from the spoken language. This creates a growing disjunction between what is written and what is heard, a gap that must be navigated by speakers who are taught to read one system and speak another. The absurdity of this situation becomes evident when one must rely on writing to clarify speech, as though the secondary representation were more reliable than the primary act itself. Language, which exists first as sound, becomes dependent on its own transcription, reversing the natural order of communication. This reversal is not without consequence. As grammarians and scholars devote increasing attention to orthography, the art of speaking is neglected. Rules are established for the eye rather than the ear, and pronunciation is forced to conform to written forms rather than evolving according to its own logic. Accents, which once carried meaning through sound, become mere marks on the page, serving to distinguish homonyms for readers but offering no guidance to listeners. Syntax may become more precise, more regular, more refined, but the harmony of speech—its rhythm, its flow, its capacity to engage—is diminished. Language becomes clearer in writing but duller in speaking, more exact in representation but less vivid in experience. The influence of political and social structures reinforces this shift. As public life moves away from direct engagement, as assemblies disappear and collective listening declines, the need for effective spoken language diminishes.

Speech is no longer the primary medium of interaction; it becomes secondary to written communication, to decrees, documents, and texts. The few remaining spaces where speech retains its centrality—the theatre, for instance—reveal the extent of the transformation. Actors, unable to rely on the natural projection of language, resort to stylised delivery, to a kind of singing that compensates for the loss of intrinsic sonority. The voice must be artificially shaped to achieve what language once achieved on its own. This artificiality signals a deeper loss: the disappearance of a language that could carry itself. The fragmentation of pronunciation across regions further complicates the situation. While written language can be standardised, codified in books and disseminated through education, spoken language remains tied to local practice. Each region develops its own habits of articulation, its own rhythms and inflections, leading to a multiplicity of accents that resist unification. What is considered natural in one place appears affected or incorrect in another. The result is not merely variation but mutual incomprehension, where speakers of the same language struggle to understand one another. The standard, when it exists, is imposed from a centre—often a capital—whose pronunciation is elevated to a norm. Yet this norm is arbitrary, sustained by social prestige rather than intrinsic superiority. Those who deviate from it are marked, not for linguistic deficiency, but for their distance from power. The divergence between written and spoken forms thus becomes a site of inequality, where mastery of the standard pronunciation functions as a marker of belonging.

Over time, this divergence can become so pronounced that the two forms of the language effectively separate. The example of Latin and its descendants demonstrates how a written language can persist long after its spoken form has transformed into something else entirely. Writing preserves a past state of the language, while speech continues to evolve, creating parallel systems that coexist but do not coincide. In such cases, the written language becomes a learned code, accessible through education, while the spoken language remains embedded in everyday life. The unity of language is maintained only superficially, through shared symbols, while its actual use diverges. The emphasis on writing, then, is not merely a technical preference but a structural transformation. It shifts the centre of language from the voice to the page, from interaction to representation, from presence to abstraction. In doing so, it alters the conditions under which language operates. Speech, once primary, becomes secondary; pronunciation, once central, becomes marginal. The language that emerges from this process is one that can be read with

precision but spoken with difficulty, one that serves the library more effectively than the public square. Its vitality diminishes, not because it lacks words or rules, but because it no longer lives fully in the act of speaking.

To restore balance would require a revaluation of speech, a recognition that language exists first in the voice and only secondarily in its inscription. It would require attending not only to what is written but to how it is said, not only to clarity of form but to clarity of sound. For language, in its fullest sense, is not a system of signs on a page but a movement between people, a vibration that carries meaning through air and into the mind. When this movement is constrained by the dominance of writing, language risks becoming silent even as it multiplies its texts, a system that speaks everywhere yet is heard nowhere.

Rousseau, J.-J. (1781) Essay on the Origin of Languages.

The Grammar of Blindness: Language Against Systems

Mary Catherine Bateson in 'Language, Languages, and Song: The Experience of Systems' from *The Individual, Communication and Society: Essays in Memory of Gregory Bateson* confronts a fundamental paradox of human existence: the very tool that enables coordination, knowledge, and civilisation—language—simultaneously distorts the complex systems upon which human survival depends, producing a persistent misalignment between how people think and how the world actually works. This misalignment is not accidental but structural, embedded in the linguistic habits through which reality is segmented, simplified, and rendered manageable at the cost of truth. The problem emerges most clearly in the actions of those who shape modern environments. Engineers, planners, scientists, and policymakers intervene in ecosystems with confidence, yet often without an adequate grasp of the systemic consequences of their actions. Roads are built, pesticides are deployed, technologies are introduced, and each decision appears rational within a narrow frame. Yet these actions accumulate, generating disruptions that exceed intention. The issue is not merely one of error but of perception itself, raising the question of whether the failure lies in human cognition as such or in historically specific modes of thought cultivated within particular cultures. If the problem is universal, then human consciousness may be intrinsically ill-suited to grasping complex, interdependent systems. If it is cultural, then the dominant frameworks of industrial modernity—especially those associated with Western rationality—may be responsible for distorting perception. A third possibility complicates both positions: that human understanding has become fragmented, divided into specialised domains such as science, religion, and art, each developing its own partial truths while losing sight of the whole. In this fragmentation, the capacity to perceive systemic relationships is diminished, and with it the ability to act in ways that sustain rather than destabilise the world.

Language stands at the centre of this condition. It is not merely a neutral medium for expressing thought but a structuring force that shapes perception itself. Its most basic features impose forms that are ill-suited to the realities they attempt to describe. The segmental and sequential nature of language breaks continuous processes into discrete units, arranging them in linear sequences of cause and effect. Complex systems, however, do not operate in this way. They are characterised by simultaneity, feedback, and circular causality, where effects loop back into causes and boundaries blur. When language forces such systems into linear narratives, it creates the illusion of simplicity where there is none. The subject-predicate structure reinforces this distortion by separating agent from action, figure from ground. This grammatical division encourages the perception of isolated entities acting upon passive environments, obscuring the relational nature

of systems in which components are mutually constitutive. Similarly, the distinction between nouns and verbs encourages the reification of processes into things, transforming dynamic interactions into static objects. What is fluid becomes fixed; what is relational becomes isolated. Language's digital character intensifies this problem. It operates through discrete symbols combined according to rules, allowing for precision and flexibility but at the cost of continuity. The natural world, by contrast, is largely analogic, governed by gradients, flows, and feedback loops. The mismatch between these modes of representation enables language to misrepresent reality, particularly in domains where non-linearity and interdependence are crucial. Environmental crises, for instance, are often framed as isolated problems requiring targeted solutions, rather than as manifestations of systemic imbalance.

Yet language is not uniform. Different linguistic systems encode different ways of organising experience, and these differences have significant implications for how reality is understood. Languages such as Trobriand and Tagalog, which lack rigid grammatical markers for tense and sequence, do not impose the same linear structure on events. They allow for descriptions that emphasise relationships and co-occurrence rather than temporal order. Similarly, Hopi linguistic forms foreground contingency and cyclicity, offering a perspective on time that resonates more closely with modern scientific understandings of interconnected processes. By contrast, English exemplifies the tendencies that Bateson critiques. Its grammatical structures privilege linear causality, discrete agency, and binary distinctions, reinforcing a worldview in which complexity is reduced to manageable fragments. This linguistic orientation extends into cultural practices, shaping decision-making processes that favour clear choices and definitive outcomes. The metaphor of the single path, as celebrated in literary expressions of individual choice, reflects a deeper commitment to linearity and separation. Alternative modes of expression, however, reveal the limitations of ordinary language. Poetry and ritual disrupt the sequential and segmental structures that dominate everyday speech. Through repetition, rhythm, and ambiguity, they create patterns that loop back on themselves, resisting linear progression. In such forms, meaning is not conveyed through direct reference but emerges from the relationships between elements. The Kyrie chant, for example, establishes a cyclical exchange between participants, dissolving the distinction between speaker and listener and creating a shared field of experience.

These practices do not merely ornament language; they offer a different mode of engagement with reality. They foreground relationality, coherence, and resonance, enabling a form of understanding that is attuned to the interconnectedness of systems. Yet their influence remains marginal in a world dominated by instrumental reasoning and technological action. The very success of language as a tool for analysis and control has contributed to the neglect of these alternative forms, reinforcing the imbalance that Bateson identifies. The consequences of this imbalance are increasingly evident. The simplifications imposed by language facilitate technological progress but obscure the systemic effects of human actions. The result is a form of blindness, where interventions are guided by partial understandings that fail to account for the complexity of the systems they affect. This blindness is not easily corrected, as it is embedded in the linguistic structures through which problems are framed and solutions are conceived. To address this condition, it is not sufficient to refine language within its existing framework. What is required is a transformation in how language is used and understood, a movement toward forms of expression that can capture relational complexity rather than suppress it. Singing, ritual, and poetic practices point toward such possibilities, not as solutions in themselves but as reminders of modes of thought that have been marginalised.

The challenge, then, is to cultivate a form of awareness that transcends the limitations of linguistic segmentation without abandoning the communicative power of language. This involves recognising language as both a tool and a constraint, capable of illuminating and obscuring in equal measure. It requires a sensitivity to the ways in which linguistic structures shape perception and a willingness to explore alternative forms of expression that can restore a sense of systemic wholeness. In this sense, language is both the source of the problem and a potential part of its resolution. It creates the conditions for misalignment, yet it also provides the means through which new forms of understanding can emerge. The task is not to escape language but to engage with it critically, to recognise its limits, and to supplement it with practices that reconnect thought to the complexity of the world.

Bateson, M. C. (1968) 'Language, Languages, and Song: The Experience of Systems', in The Individual, Communication and Society: Essays in Memory of Gregory Bateson.

Speech as Action: Against the Myth of Inner Translation

Harry Smit in 'The Social Evolution of Human Nature: From Biology to Language' rejects the dominant view that language is primarily a system for encoding pre-existing thought and instead advances a more radical thesis: language originates as a form of action, a mode of doing things in the world rather than translating inner representations into words. This shift reorients the entire problem of language evolution, moving it away from abstract mental structures and toward observable communicative practices embedded in biological and social life. At the centre of this debate stands the influential model associated with Noam Chomsky, which posits an innate language faculty grounded in a Universal Grammar. According to this framework, humans are born with a specialised cognitive architecture that enables rapid language acquisition through a process of parameter setting, guided by an internal acquisition device. Language learning, in this view, is less about interaction and more about the activation of pre-existing structures within the mind or brain. Smit challenges this model not by denying the biological basis of human capacities but by questioning the coherence of the concepts used to describe them. The idea of an innate linguistic system, he argues, remains disconnected from the explanatory frameworks of evolutionary biology. While Chomsky's theory aligns superficially with selectionist thinking, it does not engage with the empirical realities of how biological systems develop and function. In biology, abilities emerge through complex interactions between structure and environment, not from abstract, inaccessible states that cannot be directly observed or tested.

The distinction between selection and instruction further exposes this tension. Biological systems such as immune responses or bacterial resistance demonstrate how variation and selection operate within concrete mechanisms. Chomsky's model, by contrast, invokes a form of internal selection that lacks a clear biological substrate, relying instead on metaphorical descriptions of mental processes. The result is a theory that appears scientifically grounded but remains conceptually detached from the disciplines it claims to engage. This detachment becomes particularly evident in the treatment of innate knowledge. The Language Acquisition Device is described as something that "grows" in the mind or brain, yet this growth is not analogous to the development of biological organs or functions. Unlike the kidney or the immune system, whose operations can be observed and measured, the LAD remains an abstract construct, inaccessible to empirical investigation. The shift from speaking of abilities to speaking of states compounds this problem, introducing a vocabulary that obscures rather than clarifies the nature of linguistic competence. The study of aphasia provides a concrete counterpoint to this abstraction. When language is impaired through brain injury, what is lost—and in some cases regained—is not a store of knowledge but an ability

to engage in communicative activity. Recovery from aphasia does not involve retrieving hidden grammatical rules but rebuilding the capacity to use language in context. This aligns with a biological understanding of function as dynamic and relational, rather than static and encoded.

From this perspective, language cannot be reduced to a system of internal representations. It must be understood as a form of behaviour, shaped by interaction and embedded in social contexts. The evolution of language, therefore, is not the evolution of a code but the evolution of practices—ways of requesting, naming, expressing, and coordinating action. These practices are rooted in the bodily and social capacities of human beings, emerging from gestures, vocalisations, and shared attention. Gesture plays a foundational role in this account. Early hominids likely relied on flexible, context-sensitive gestures to convey meaning, using pointing and other forms of bodily expression to direct attention and communicate intentions. The shift to bipedalism, which freed the hands, may have facilitated this development, enabling more complex forms of gestural interaction. These gestures were not merely precursors to language but integral components of a communicative system that gradually expanded in scope and complexity. Social learning mechanisms further supported this expansion. The ability to follow gaze, imitate actions, and engage in teaching created a framework for the transmission of knowledge. This process, often described as natural pedagogy, allowed individuals to share information about tools, environments, and social practices. Language emerges within this context as an extension of these communicative acts, enhancing their precision and flexibility rather than replacing them.

The transition from gestures to words represents a gradual integration rather than a sudden transformation. Vocalisations began to complement gestural communication, providing additional channels for conveying meaning. Over time, increasing control over vocal production enabled the development of spoken language, which could operate independently of immediate visual context. This shift expanded the range of communicative possibilities, allowing for the expression of abstract concepts, hypothetical scenarios, and complex social relations. Changes in human life history also contributed to this process. Earlier weaning, for example, created new demands for communication between infants and caregivers. In cooperative breeding systems, where multiple individuals participate in child-rearing, effective communication becomes essential for coordinating care. Infants, in turn, develop behaviours such as pointing and babbling to engage caregivers and facilitate learning. These early communicative acts form the foundation for later linguistic abilities. Genetic factors are not absent from this account, but their role is reinterpreted. Rather than encoding specific linguistic structures, genes support the development of general capacities—such as neural plasticity and social cognition—that make language possible. The example of the UBE3A gene illustrates how genetic mechanisms can influence communicative behaviour without determining its form. Language evolves through the interaction of these biological capacities with social and cultural environments, not through the direct expression of genetic instructions.

This framework leads to a fundamental redefinition of language. It is not a system for translating thought into words but a set of practices through which thought itself is shaped and enacted. To speak is not to encode an internal message but to participate in a social activity, to do something in relation to others. Meaning arises not from correspondence between words and mental representations but from the use of language within specific contexts. The implications of this shift extend beyond linguistics. By grounding language in action, it reconnects the study of communication with the broader dynamics of human evolution. Language becomes part of a continuum that includes gesture, social interaction, and cultural transmission, rather than a separate, specialised faculty. It is through this continuum that humans developed the capacity to

coordinate actions, share knowledge, and build complex societies. In this light, the evolution of language appears not as a mystery requiring a unique biological explanation but as an emergent phenomenon arising from the interplay of biology, behaviour, and culture. It is the product of countless acts of communication, each contributing to the gradual transformation of simple gestures into complex linguistic systems. Language, therefore, is not a code hidden within the brain but a living practice, continually recreated through use.

Smit, H. (2014) The Social Evolution of Human Nature: From Biology to Language. Cambridge: Cambridge University Press.

The Voice of Conscience: Morality as Linguistic Practice

Harry Smit in 'The Social Evolution of Human Nature: From Biology to Language' develops Darwin's insight from *The Descent of Man* by arguing that the defining feature of human morality is not merely social behaviour or emotional responsiveness but the capacity, grounded in language, to reflect upon actions, evaluate them, and regulate future conduct through articulated norms. This shift from instinctive reaction to reflective judgment marks the transition from sociality to morality, transforming behaviour into a domain governed by reasons rather than impulses. Darwin's original distinction remains crucial. Many animals exhibit forms of cooperation, even risking their own safety for others, yet such actions do not constitute morality in the strict sense. What distinguishes humans is the ability to revisit past actions, anticipate future consequences, and subject both to evaluation. This evaluative capacity introduces the possibility of remorse, shame, and justification, phenomena that presuppose not only emotional sensitivity but also the cognitive and linguistic ability to frame actions within a system of norms. Without language, there can be no explicit comparison between what one did and what one ought to have done. Language thus emerges as the foundation of moral behaviour. It enables individuals to formulate reasons, to articulate rules, and to share expectations within a community. Early forms of communication, rooted in kinship and cooperation, provided the basis for this development, but it was the introduction of symbolic categories that transformed these practices into rule-governed systems. Terms denoting relationships, obligations, and prohibitions allowed individuals to move beyond immediate interactions and to construct abstract frameworks within which behaviour could be evaluated and guided.

The incest taboo offers a revealing case. Explanations grounded in emotion, such as the theory that aversion to incest arises from developmental familiarity, fail to account for the variability and complexity of human responses. Familiarity may produce indifference rather than aversion, and evolutionary considerations do not uniformly support avoidance. Similarly, nativist accounts that posit an innate moral grammar conflate biological recognition of kin with the linguistic articulation of moral rules. While animals may distinguish kin from non-kin, they do not formulate prohibitions or justify their actions through normative statements. The emergence of the incest taboo, therefore, cannot be explained solely by instinct or innate structure. It reflects the imposition of a rule upon a set of natural dispositions, a rule that must be expressed, taught, and enforced through language. To say that incest is wrong is not merely to express a feeling but to invoke a shared standard that guides behaviour and invites justification. This transformation from disposition to norm is inseparable from the linguistic capacity to formulate and communicate obligations. The limitations of emotionist models become evident in this context. Theories that locate the source of morality in emotional reactions overlook the role of judgment in shaping those reactions. Emotions in humans are not raw responses but are directed toward objects that are interpreted within a framework of values. Fear, for instance, is not simply a reaction to a stimulus but involves an

assessment of danger. Similarly, moral emotions such as guilt or indignation presuppose an understanding of norms and their violation. Emotion alone cannot generate morality; it must be integrated with cognitive and linguistic processes that define what counts as right or wrong.

Nativist models encounter a parallel difficulty. By positing an innate moral faculty analogous to a universal grammar, they attribute moral knowledge to pre-existing structures within the mind. Yet this approach abstracts morality from the practices through which it is learned and enacted. Moral development does not consist in the activation of hidden parameters but in the gradual acquisition of the ability to reason, deliberate, and act in accordance with shared norms. This process is inherently social and linguistic, unfolding through interaction and education rather than through the unfolding of an internal blueprint. The evolution of fairness illustrates how these capacities operate in practice. Cooperative activities, such as collective hunting, create situations in which resources must be distributed among participants. Without mechanisms to regulate sharing, such systems are vulnerable to free-riding, threatening group cohesion. The emergence of norms governing distribution represents a solution to this problem, enabling individuals to coordinate expectations and enforce obligations. Language plays a crucial role here, allowing for the articulation of rules, the negotiation of claims, and the justification of decisions. These abilities are not innate in a fully formed sense but are acquired through socialisation. Children learn to distinguish between right and wrong through interaction with caregivers, who model behaviour, provide explanations, and enforce rules. This process involves more than imitation; it requires the internalisation of norms and the development of the capacity to act for reasons. The child does not merely follow rules but comes to understand them as binding, integrating them into a framework of moral judgment.

In this way, moral behaviour emerges as a complex achievement, integrating biological predispositions, emotional capacities, cognitive skills, and linguistic practices. It cannot be reduced to any single component. Emotions provide motivation, cognition enables evaluation, and language allows for articulation and transmission. Together, these elements form a system in which individuals are capable of regulating their behaviour in accordance with shared standards. The central role of language in this system underscores its transformative power. By enabling individuals to formulate and communicate norms, language creates a space in which actions can be evaluated not only in terms of their immediate consequences but in relation to abstract principles. It allows for the possibility of justification, disagreement, and revision, making morality a dynamic and evolving domain rather than a fixed set of instincts. Darwin's characterisation of humans as moral beings thus finds its fullest expression in the integration of language and social life. It is through language that individuals become capable of conscience, of holding themselves accountable to standards that transcend immediate desires. This capacity transforms human societies, enabling the development of complex systems of norms, from familial obligations to legal institutions.

The evolution of morality, therefore, is inseparable from the evolution of language. It reflects the gradual emergence of practices in which behaviour is guided by reasons, articulated through words, and sustained by shared understanding. In this process, humans become not merely social animals but participants in a normative order, capable of shaping their actions in accordance with values that they themselves create and sustain.

Smit, H. (2014) The Social Evolution of Human Nature: From Biology to Language. Cambridge: Cambridge University Press.

The Gossip Engine: Language as Social Infrastructure

Robin Dunbar in ‘Why Only Humans Have Language’ from *The Prehistory of Language* edited by Rudolf Botha and Chris Knight reframes the origin of language by shifting attention away from technical communication toward the social demands of increasingly complex human groups, arguing that language did not primarily evolve to describe the world but to manage relationships within it, functioning as a mechanism for social bonding that enabled humans to transcend the limitations of primate interaction. The central puzzle is stark: despite many species exhibiting forms of communication, only humans possess language in its full grammatical and expressive complexity. The question is not whether animals communicate but why communication in humans reached a level that no other species attained. Traditional explanations have often assumed that language evolved as a tool for exchanging information about the environment—how to hunt, make tools, or navigate terrain. Yet this instrumental view fails to account for the actual content of human communication, which overwhelmingly concerns social relations rather than technical instruction. This discrepancy invites a reversal of perspective. If language were primarily designed for transmitting technical knowledge, one would expect such information to dominate everyday conversation. Instead, studies consistently show that the majority of human speech is devoted to social topics—relationships, reputations, alliances, and conflicts. Language appears less as a manual for survival than as a medium for negotiating the complexities of social life.

The social bonding hypothesis offers a coherent explanation. In primate societies, cohesion is maintained through grooming, a time-intensive activity that limits group size. Grooming functions not merely as hygiene but as a mechanism for reinforcing social ties, creating networks of trust and cooperation. However, this system imposes a strict constraint: there are only so many hours in a day that can be devoted to maintaining relationships through physical contact. As a result, primate group sizes tend to stabilise around a relatively low number. Humans, by contrast, live in significantly larger groups, often averaging around 150 individuals. This expansion would be impossible if social bonding relied solely on grooming. Language provides a solution by allowing multiple individuals to engage simultaneously, extending the reach of social interaction beyond the limits of physical contact. Through speech, individuals can maintain relationships, exchange information about others, and reinforce group cohesion while engaged in other activities. Language thus operates as a form of “vocal grooming,” vastly increasing the efficiency of social bonding. This efficiency is not merely quantitative but qualitative. Language enables the circulation of reputational information, allowing individuals to monitor the behaviour of others indirectly. In doing so, it creates a network of shared knowledge that stabilises cooperation and deters free-riding. Social life becomes less dependent on direct interaction and more reliant on the circulation of narratives, evaluations, and expectations. The group is held together not only by shared activities but by shared discourse.

Alternative hypotheses capture aspects of this process but fail to provide a comprehensive account. The idea that language evolved as a form of sexual display, enhancing mate attraction through verbal skill, explains certain features of linguistic creativity but does not address the broader problem of group cohesion. Similarly, the notion that language emerged to enforce social contracts highlights the importance of norms and agreements but presupposes a level of social organisation that itself requires explanation. Both theories identify secondary functions of language but do not account for its foundational role in sustaining large social networks. Comparative analysis strengthens the case for the social bonding hypothesis. The relationship between brain size and group size in primates suggests a cognitive limit to the number of relationships an individual can manage. Humans, with their enlarged neocortex, extend this limit, but even this expansion would be insufficient without a mechanism for efficiently maintaining social ties. Language fills this role,

reducing the time required for bonding while increasing the number of individuals who can be included within a network of relationships. Empirical observations support this conclusion. Humans devote a smaller proportion of their time to explicit bonding activities than would be required if grooming were the primary mechanism, yet they sustain much larger groups. At the same time, the predominance of social content in conversation indicates that language is actively used to maintain these bonds. Speech becomes the medium through which social structures are continuously reproduced and negotiated.

The evolutionary timeline aligns with this interpretation. Increases in brain size among hominins correspond to the demands of managing larger social groups, suggesting a co-evolution of cognitive capacity and social complexity. Fossil evidence indicates that the physiological prerequisites for speech—fine breath control and vocal articulation—were in place by around 500,000 years ago. However, the presence of these features does not necessarily imply the existence of fully developed language. Early vocalisations may have functioned more like music or emotional expression, gradually evolving into structured linguistic systems as social demands intensified. The uniqueness of human language ultimately rests on a cognitive capacity that extends beyond communication itself: higher-order intentionality. While other primates can represent simple mental states, humans can embed multiple layers of intention, enabling them to understand not only what others think but what others think about what others think. This recursive capacity allows for the management of complex social relationships, where reputation, trust, and deception play central roles. Language provides the medium through which these layered mental states can be expressed and coordinated. Without language, such complexity would be unmanageable. The cognitive demands of large social groups require a system for externalising and sharing mental representations, for coordinating expectations and maintaining coherence across multiple relationships. Language meets this need by transforming private thoughts into public discourse, allowing individuals to align their understanding of the social world.

The emergence of language, therefore, is not an isolated event but the culmination of a series of interrelated developments: increasing brain size, expanding social networks, and the growing complexity of interpersonal relations. Language arises at the point where these factors converge, providing a solution to the problem of maintaining cohesion in large groups. In this sense, language is less a tool for describing reality than a system for organising social life. Its primary function is not to represent the world but to sustain the relationships that make human societies possible. The exchange of technical information, while important, emerges as a secondary function built upon this social foundation. The question of why only humans have language thus finds its answer not in a single biological mutation or cognitive breakthrough but in the unique trajectory of human social evolution. It is the scale and complexity of human social life that demanded a new form of communication, one capable of maintaining bonds across large networks. Language is the response to that demand, a system that transforms social interaction into a continuous, distributed process of communication.

Dunbar, R. (1996) Grooming, Gossip and the Evolution of Language. London: Faber and Faber.

The Cooperative Engine: Language as a Social System

Luc Steels in 'Is Sociality a Crucial Prerequisite for the Emergence of Language?' from *The Prehistory of Language* edited by Rudolf Botha and Chris Knight advances a decisive shift in understanding language by treating it not as a fixed structure encoded in the mind but as a complex adaptive system that emerges from social interaction, where communication, cognition, and

cooperation co-evolve through continuous processes of innovation, selection, and alignment among individuals. The study of language origins, in this framework, moves beyond the search for isolated biological traits or symbolic artefacts and instead focuses on the mechanisms that make language possible as a living system. Theoretical approaches play a central role here, not as speculative exercises but as rigorous tools comparable to those used in physics or biology. Through mathematical modelling, computational simulations, and experimental setups involving artificial agents, researchers are able to reconstruct the minimal conditions under which communication systems can arise and stabilise. These models provide a laboratory for testing competing hypotheses, particularly the tension between nativist accounts, which posit innate structures, and cultural accounts, which emphasise emergence through interaction. Language, understood as a complex adaptive system, exhibits two seemingly contradictory properties: systematicity and fluidity. On the one hand, it must maintain enough regularity to ensure mutual intelligibility among speakers. On the other, it remains inherently dynamic, continuously reshaped by use. No language exists as a perfectly stable entity shared identically by all its speakers; instead, it is distributed across individuals, each contributing to its ongoing transformation. This fluidity undermines the idea of a fixed universal grammar emerging from a single genetic mutation. Rather, it points to a gradual process of cultural evolution, where structure arises from repeated interaction rather than pre-specified design.

The driving force of this evolution lies in problem-solving during communication. Speakers constantly encounter situations where existing linguistic resources are insufficient. In such moments, they improvise, inventing new expressions or modifying existing ones. These innovations are not random but are shaped by the immediate demands of interaction. Listeners, in turn, interpret these novel forms through context, inference, and feedback, creating a loop in which successful innovations are retained and unsuccessful ones discarded. Over time, these local adjustments accumulate, giving rise to larger patterns and structures. What begins as a repair strategy becomes a convention; what is repeated becomes grammar. Selection processes operate at multiple levels within this system. At the level of individual interaction, speakers choose forms that maximise communicative success, favouring clarity, efficiency, and relevance. At the communal level, frequency of use reinforces certain patterns, leading to the emergence of shared conventions. This process resembles natural selection but operates within a cultural domain, where variation arises from innovation and selection is driven by communicative success. The resulting order is not imposed from above but emerges from below, through decentralised interactions among agents. Complexity itself is not a starting point but an outcome of this process. Early communication systems are likely to have been holistic, relying on undifferentiated signals. As communicative demands increase, pressures for clarity and differentiation lead to the development of structured systems. Grammatical distinctions, such as case marking, emerge to resolve ambiguities and enhance precision. This transition from simplicity to complexity is gradual, driven by the cumulative effect of countless interactions. It is a process that can be observed not only in hypothetical reconstructions of early language but also in contemporary phenomena such as creole formation or the spontaneous development of communication systems among individuals with limited linguistic input.

Experimental work with artificial agents provides a powerful demonstration of these principles. In language game experiments, agents with no prior linguistic knowledge interact in controlled environments, attempting to communicate about shared contexts. Through repeated interactions, they develop categories, assign labels, and establish grammatical patterns. These systems exhibit key properties of human language, including arbitrariness, productivity, and displacement, despite the absence of any pre-programmed linguistic structure. The emergence of these properties

suggests that language can arise naturally from the dynamics of social interaction, without the need for an innate grammar. Crucially, these experiments reveal that sociality is not merely a facilitating condition but a necessary prerequisite for language. Joint attention, the ability to focus on a shared object or event, provides the foundation for establishing reference. Without it, communicative attempts remain ambiguous and fail to stabilise. Perspective reversal, the capacity to adopt another's viewpoint, enables speakers to tailor their expressions to the listener's understanding, increasing communicative success. These abilities are not optional enhancements but essential components of any system that aspires to the richness and flexibility of human language. The role of cooperation becomes even more apparent when the possibility of deception is introduced. In environments where agents can exploit communication for individual gain, the stability of the system depends on mechanisms that enforce trust. Experiments show that communication systems collapse when free-riding becomes widespread but stabilise when agents adopt strategies that reward cooperation and punish deception. Language, therefore, is inseparable from the social norms that sustain it. It requires not only cognitive capacities but also a commitment to shared practices and mutual accountability.

This interdependence between language and sociality points toward a deeper evolutionary connection. Human societies are characterised by a level of cooperation that extends beyond immediate kinship, often described as ultrasociality. The emergence of such large-scale cooperation remains one of the central puzzles of human evolution. Language appears to play a dual role in this process: it both depends on social cooperation and reinforces it. By enabling individuals to coordinate actions, share information, and establish norms, language contributes to the stability and expansion of social groups. At the same time, the development of language introduces new forms of risk. Communication systems that allow for rich expression also open the possibility of misunderstanding, manipulation, and conflict. Unlike the more rigid communication systems of other species, which prioritise stability, human language embraces variability and innovation. This openness is the source of its power but also of its fragility. It requires continuous maintenance through social interaction, negotiation, and trust. The emergence of language, therefore, cannot be understood as a purely biological or purely cultural event. It is the product of an interaction between cognitive capacities and social dynamics, each shaping the other over time. Sociality provides the conditions under which language can arise, while language enhances and transforms sociality, creating a feedback loop that drives the evolution of both.

In this perspective, language is not a static system to be acquired but a process to be enacted, a collective achievement sustained through ongoing interaction. It exists not in the mind alone but in the space between individuals, in the shared practices that make communication possible. The question of language origins thus becomes a question of social organisation: how beings capable of cooperation, attention, and perspective-taking create systems of meaning that exceed the capacities of any individual.

Steels, L. (2011) 'Is Sociality a Crucial Prerequisite for the Emergence of Language?', in Botha, R. and Knight, C. (eds.) The Prehistory of Language. Oxford: Oxford University Press.

Ambiguity as Order: Music and the Limits of Speech

Ian Cross and Ghofur Eliot Woodruff in 'Music as a Communicative Medium' from *The Prehistory of Language* edited by Rudolf Botha and Chris Knight challenge the assumption that communication in human evolution culminates in language by demonstrating that music constitutes a parallel system of interaction, one that does not compete with language in precision

but surpasses it in the management of social uncertainty, operating through ambiguity, affect, and shared temporal experience. The universality of music poses a problem analogous to that of language, yet with an inverse structure. If language is often treated as the pinnacle of human communication, music appears at first as an auxiliary system, a domain of emotion or ornament. However, ethnographic evidence destabilises this hierarchy. Across cultures, music is not marginal but central, embedded in rituals, healing practices, transitions of life, and the maintenance of collective identity. Its persistence suggests not redundancy but necessity, raising the question not of why music exists, but of what communicative function it fulfils that language alone cannot. The answer emerges most clearly in contexts of instability. Human societies are constantly confronted with situations in which meanings are contested, relationships are fragile, and outcomes uncertain. In such contexts, the precision of language becomes a liability. To articulate a position clearly is to risk conflict, to impose a boundary where flexibility is required. Language, by its nature, demands commitment to a particular interpretation, fixing meaning in a way that may destabilise interaction.

Music operates differently. Its defining feature is not clarity but indeterminacy. Musical forms do not resolve into singular propositions; they invite multiple interpretations, allowing participants to align without requiring agreement. This capacity for polysemy enables music to function as a medium in which social relations can be negotiated without being explicitly defined. It creates a shared space in which individuals can participate without committing to incompatible positions, sustaining cohesion in the absence of consensus. This ambiguity does not imply arbitrariness. Music functions as an honest signal, grounded in the relationship between sound and affect. Variations in pitch, rhythm, and intensity correspond to physiological and emotional states, allowing listeners to infer the condition of the performer. This connection reflects deeper biological patterns, observable in animal communication systems, where vocalisations convey information about size, intention, or arousal. In humans, these motivational-structural codes persist, shaping the emotional impact of music even as it becomes culturally elaborated. Yet music exceeds these biological foundations. Its meanings are not fixed but modulated by cultural context and individual experience. A melody may evoke similar emotional contours across listeners, but its significance is shaped by shared histories, practices, and associations. Music thus operates at the intersection of biology and culture, combining universal tendencies with local variation. It is neither purely instinctive nor purely symbolic, but a hybrid system that draws on both.

A crucial dimension of this system is its socio-intentional character. Music does not merely express states; it enacts relationships. Through timing, rhythm, and structure, it signals attention, coordination, and shared intention. These features parallel the prosodic elements of speech—intonation, stress, and rhythm—but are amplified in music to create a domain in which communication is oriented toward participation rather than reference. The listener is not simply an interpreter but a co-participant, drawn into a shared temporal framework. This participatory quality is most evident in the phenomenon of entrainment. When individuals align their movements, attention, or vocalisations to a common pulse, they generate a collective synchrony that reinforces social bonds. Entrainment transforms communication from an exchange of information into a coordinated activity, producing a sense of unity that is difficult to achieve through language alone. It is this capacity that allows music to function as a mechanism of social cohesion, particularly in large groups where direct interaction is limited. The contrast between language and music thus reveals two complementary modes of communication. Language excels in the transmission of specific, decomposable meanings, enabling the coordination of action through explicit propositions. Music, by contrast, organises sociality itself, creating conditions for alignment and

affiliation without requiring semantic precision. Where language divides and specifies, music integrates and resonates.

This distinction has evolutionary implications. If language evolved to manage the complexities of information and intention, music may have evolved to manage the complexities of social relations. The two systems are not independent but interdependent, each addressing different dimensions of human interaction. Music provides a medium for maintaining cohesion in situations where language would generate conflict, while language provides a means for articulating distinctions that music leaves open. Archaeological evidence suggests that musicality emerged early in human evolution, possibly alongside or even before fully developed language. The presence of musical instruments and the universality of rhythmic and melodic practices indicate that music played a foundational role in the development of human sociality. Its capacity to regulate emotion, coordinate action, and establish shared identity would have been crucial in the formation of stable groups. The broader significance of music lies in its capacity to reveal the limits of language. It demonstrates that communication need not be reducible to the transmission of propositions and that meaning can be generated through patterns of interaction rather than explicit representation. In doing so, it challenges the assumption that clarity is the highest form of communication, suggesting instead that ambiguity, when structured and shared, can be a more powerful medium for sustaining social life.

Music thus occupies a unique position within the ecology of human communication. It is neither a precursor to language nor a derivative form but a parallel system that complements and extends linguistic capacities. By enabling individuals to navigate uncertainty, align affect, and participate in collective experience, it provides a foundation for the forms of social organisation that define human life.

Cross, I. and Woodruff, G. E. (2009) 'Music as a Communicative Medium', in Botha, R. and Knight, C. (eds.) The Prehistory of Language. Oxford: Oxford University Press.

The Paradox of the Voice: Speech Beyond Adaptation

Bart de Boer in 'Why Women Speak Better Than Men (and Its Significance for Evolution)' from *The Prehistory of Language* edited by Rudolf Botha and Chris Knight confronts a central paradox in the evolution of human speech: the anatomical configuration that enables the richness of human vocal expression also introduces significant biological risk, suggesting that the emergence of speech cannot be explained by a single adaptive function but must instead be understood as the outcome of multiple, overlapping evolutionary pressures. The human vocal tract differs markedly from that of other primates. While apes retain a high larynx and relatively flat tongue, humans exhibit a lowered larynx and a rounded tongue, creating an expanded vocal cavity capable of producing a wide range of distinct sounds. This configuration, however, comes at a cost. The separation between the respiratory and digestive tracts is reduced, increasing the likelihood of choking. Such a trade-off demands explanation, as evolutionary processes tend to eliminate features that impose significant risks unless they confer compensatory advantages. Several hypotheses have been proposed to account for this transformation, each capturing a different aspect of the problem. The suggestion that the lowered larynx is a byproduct of bipedalism fails to withstand scrutiny, as similar anatomical features are absent in other bipedal species and present in some quadrupeds. The hypothesis of size exaggeration offers a more compelling account, particularly given that in many species males lower their larynx to produce deeper vocalisations

that signal dominance or attractiveness. Yet this explanation alone cannot account for the full range of articulatory flexibility observed in human speech.

The traditional view that the vocal tract evolved specifically to maximise speech capabilities appears plausible, yet it too proves insufficient when examined in detail. If speech were the sole driving force, one would expect anatomical features to align consistently with communicative efficiency. However, variation within the human species complicates this assumption. The comparison between male and female vocal tracts reveals that those less influenced by size exaggeration—namely female vocal tracts—are in fact more acoustically versatile. This finding emerges from computational modelling that simulates the articulatory possibilities of different vocal tract configurations. By mapping the range of producible sounds within an acoustic space defined by key formants, these models reveal that female vocal tracts occupy a broader क्षेत्र of this space than male ones. Empirical data corroborate this result, showing that female speakers tend to produce a wider range of vowel distinctions. The implication is striking: the anatomical configuration most directly associated with male vocalisation does not optimise speech but reflects other evolutionary pressures. The role of the larynx, therefore, must be reconsidered. While its descent contributes to vocal diversity, it is not the primary determinant of speech capacity. Other factors, such as the size and shape of the vocal tract and the flexibility of articulatory movements, play equally significant roles. The mixed model, combining elements of male and female anatomy, demonstrates that the relationship between structure and function is not linear but distributed across multiple interacting components.

This complexity undermines the notion that speech evolved through a single, targeted adaptation. Instead, it suggests that the human vocal system is the product of competing demands. On one side, pressures related to social signalling, particularly in male competition and mate selection, favour deeper, more resonant vocalisations. On the other, the demands of communication favour flexibility, clarity, and differentiation. The resulting anatomy reflects a compromise between these forces, rather than an optimisation for either. The implications for understanding language evolution are significant. If the vocal tract is not uniquely adapted for speech, then speech itself must be understood as a system that exploits available biological resources rather than one that is directly encoded in them. This aligns with broader arguments that language adapts to the constraints of the human body and brain, rather than the other way around. The vocal tract provides a range of possibilities, but it is the cultural and communicative practices of humans that determine how these possibilities are realised. The case of Neanderthals illustrates the importance of this perspective. Debates about their capacity for speech have often focused on reconstructing their vocal anatomy, particularly the position of the larynx. However, if speech does not depend solely on this feature, such reconstructions risk oversimplifying the problem. Modelling Neanderthal vocal tracts on male anatomy may obscure the potential for speech-like communication, as it conflates features associated with social signalling with those relevant to linguistic expression. A more nuanced approach would consider a range of anatomical configurations, including those that prioritise articulatory flexibility over vocal depth.

More broadly, the study highlights the limitations of viewing language evolution through a purely biological lens. While anatomical features set constraints, they do not determine outcomes. The emergence of language depends on the interaction between biological structures, cognitive capacities, and social practices. The vocal tract, in this sense, is not a blueprint for speech but a medium through which communicative systems are realised. This perspective opens new directions for research. Rather than searching for a single evolutionary moment in which speech emerged, it invites exploration of gradual transformations in both anatomy and behaviour.

Computational models can simulate these processes, allowing researchers to test how different configurations support or constrain communication. At the same time, comparative studies of other species and early hominins can shed light on the range of possibilities available to evolving systems. The paradox of the human voice thus reflects a broader principle in the evolution of language: that complex systems often arise not from optimal design but from the interplay of competing pressures. What appears as a specialised adaptation may, on closer inspection, be a compromise shaped by multiple functions. Speech emerges within this space of tension, not as a direct product of anatomy but as a practice that transforms anatomical potential into communicative reality.

De Boer, B. (2011) 'Why Women Speak Better Than Men (and Its Significance for Evolution)', in Botha, R. and Knight, C. (eds.) The Prehistory of Language. Oxford: Oxford University Press.

1.3. ROOTS

The Impossible Capture: Grammar Between Description and Loss

Nicholas Evans and Alan Dench in 'Catching Language: The Standing Challenge of Grammar Writing' argue that the writing of a grammar is not merely a technical task of documentation but an ongoing struggle to capture a living system that resists fixation, revealing the tension between language as practice and language as representation. A descriptive grammar aspires to present a language in its totality, to gather its structures, patterns, and meanings into a coherent whole. Yet this aspiration is inherently paradoxical. Language exists in use, in fleeting acts of communication, in variation and context, while grammar seeks to stabilise, codify, and render it permanent. The grammarian stands between these two realities, attempting to transform movement into structure, contingency into system, and lived speech into an object of knowledge. This transformation is not neutral. It requires selection, interpretation, and abstraction. What is included, what is excluded, what is treated as central or peripheral—these decisions shape the representation of the language as much as the language itself. The grammar does not simply reflect the language; it constructs a version of it, one that can be read, compared, and analysed. In doing so, it inevitably simplifies, regularises, and sometimes distorts the phenomena it seeks to describe.

The challenge, then, is not only to document but to remain faithful to the variability and richness of actual usage, to allow the language to “speak” while simultaneously imposing a framework that makes it intelligible to others. This dual demand—fidelity and systematisation—defines the intellectual labour of grammar writing. The process is further complicated by the need to position the description within a broader landscape of linguistic knowledge. A grammar cannot exist in isolation; it must engage with typology, with the comparative study of languages, and with theoretical models that seek to explain linguistic structure. Descriptive linguistics provides the empirical foundation, grounded in data collected from speakers and texts. It aims to capture the particularities of a language, its unique configurations and patterns. Yet these particularities gain significance only when placed in relation to other languages, when similarities and differences can be identified and interpreted. This is the role of typology, which abstracts from individual cases to propose general categories and parameters. Typology, in turn, generates questions that feed back into description, prompting the search for structures that might otherwise remain unnoticed. Formal linguistics adds another layer, offering precise models that aim to account for these patterns in a systematic way. It introduces a level of abstraction that can reveal underlying regularities but also risks detaching the analysis from the empirical reality it seeks to explain. The relationship

between these three domains—description, typology, and formal modelling—is not hierarchical but interdependent. Each contributes a different perspective, and each depends on the others for validation and refinement.

A descriptive grammar, in this sense, is not merely a record but a theoretical statement. It embodies assumptions about what counts as a linguistic unit, how structures are organised, and what relationships are significant. It is a theory of the language it describes, even when it avoids explicit formalisation. This broader conception of theory challenges the view that explanation belongs solely to formal models. Explanation can also arise from careful description, from the identification of patterns in usage, from the recognition of historical and social influences that shape linguistic forms. Language is not only a cognitive system but also a cultural and historical phenomenon, and its structures cannot be fully understood without considering these dimensions. The emphasis on descriptive adequacy thus becomes a counterweight to the search for universal principles. It insists that any explanation must remain grounded in the diversity of actual languages, in the ways they are used and experienced by speakers. This grounding is particularly important when dealing with languages that have strong prescriptive traditions or long literary histories. In such cases, the grammarian must navigate between competing norms, between what speakers do and what they are told they should do. The distinction between grammar and lexicon, between rule and exception, becomes blurred, and the task of description becomes one of negotiation rather than simple classification. The grammar must account for variation, for change over time, for the coexistence of different registers and styles.

It must capture not only the system but its dynamics, the ways in which it is maintained, altered, and contested. This dynamic aspect of language highlights the limits of any attempt at total capture. A grammar, no matter how comprehensive, remains a snapshot, a representation of a system at a particular moment, under particular conditions. It cannot fully encompass the ongoing processes of change and adaptation that characterise language in use. The very act of writing a grammar introduces a temporal lag, fixing what is in flux, preserving forms that may already be shifting. In this sense, grammar writing participates in the same tension observed elsewhere between speech and writing: the movement from living practice to stable representation. Yet this tension is also productive. By attempting to capture language, grammars make it visible, accessible, and comparable. They enable communication across communities and disciplines, allowing languages to be studied, taught, and preserved.

They provide the material for typological generalisation and theoretical modelling, contributing to a broader understanding of human linguistic capacity. The challenge is not to eliminate the tension between description and representation but to work within it, to remain aware of its implications and limitations. The grammarian must therefore adopt a stance that is both rigorous and flexible, attentive to detail yet open to revision, grounded in data yet responsive to theory. This stance recognises that language cannot be fully contained within any single framework, that it exceeds the categories used to describe it. The task is not to produce a definitive account but to offer a coherent and insightful one, one that captures as much as possible without claiming completeness. In this way, grammar writing becomes less an act of closure than an ongoing engagement, a continual effort to approach a phenomenon that is always, in some sense, beyond capture.

Ameka, F.K., Dench, A. and Evans, N. (2006). Catching Language. Walter de Gruyter.

The Grammar That Writes Itself: Between Description and Construction

Ulrike Mosel in ‘Grammaticography: The Art and Craft of Writing Grammars’ reveals that grammar writing is not the mechanical transcription of linguistic knowledge but a fragile act of construction, where the attempt to stabilise language exposes its resistance to being fixed. Unlike lexicography, which has institutionalised its methods and tools, grammaticography remains curiously under-theorised, as if the act of writing grammar were a transparent extension of analysis rather than a separate intellectual craft. Yet the moment one attempts to assemble a grammar, the illusion of transparency collapses. Knowing a language is not the same as being able to represent it. Analysis provides fragments—patterns, categories, observations—but the grammar demands form, sequence, coherence. It requires decisions that are not dictated by the language itself but by the writer’s perspective, audience, and purpose. In this sense, grammar writing is already an act of interpretation, where the language is reorganised into an intelligible order that did not previously exist in such a unified form. This is why grammars differ so radically from one another even when describing the same system: they are not neutral mirrors but structured reconstructions. The typology of grammars makes this visible. Whether a grammar is prescriptive or descriptive, monolingual or bilingual, pedagogical or analytical, each choice defines a different relationship between language and its representation.

A grammar for native speakers differs fundamentally from one written for linguists; a grammar aimed at teaching imposes clarity and simplification, while one aimed at analysis tolerates complexity and ambiguity. Even the distinction between standard and non-standard varieties reveals that grammar writing is entangled with power, normativity, and social hierarchy. To describe a standard language is often to legitimise it; to describe a vernacular is to bring into visibility what has been marginalised. Thus, grammaticography is never purely technical; it is always situated within broader social and intellectual frameworks that shape what counts as language and how it should be presented. The process of writing a grammar further destabilises the boundaries between data, analysis, and description. One might assume that data collection precedes analysis and that analysis precedes writing, but in practice these stages collapse into one another. The act of writing exposes gaps in the data, forcing the researcher back into the field or the corpus. Structures that seemed clear in analysis become problematic when one attempts to explain them systematically. The grammar, instead of being the final product, becomes a site of discovery, where the language reveals new complexities precisely because it is being forced into a structured representation.

This recursive movement—between observation, interpretation, and inscription—demonstrates that grammar is not extracted from language but produced through engagement with it. The structure of the grammar itself becomes a problem. Should one begin with sounds and build upward, or start with sentences and work downward? The ascending and descending models offer competing visions of linguistic organisation, yet neither fully captures the interdependence of linguistic phenomena. Language does not exist in neat hierarchies; phonology, morphology, syntax, and semantics constantly interact, resisting linear ordering. The necessity of cross-referencing, of returning to earlier sections to clarify later ones, reveals that the grammar is not a tree but a network. Every attempt to impose order is accompanied by the awareness that this order is provisional, a convenience rather than a reflection of the language’s true structure. This tension is mirrored in the relationship between grammar and lexicon. The traditional division between rules and words collapses under scrutiny, as idioms, grammaticalised forms, and functional expressions occupy a space that belongs to both domains. The grammar cannot fully exclude them, yet including them risks transforming the grammar into a dictionary. The boundary is not given but negotiated, and each grammar draws it differently. What appears as a technical decision is in

fact a conceptual one, shaping how the language is understood: as a system of rules, a collection of expressions, or an interplay between the two. The role of the author further complicates the process. Ideally, grammar writing would be a collaboration between a native speaker and a trained linguist, combining intuitive knowledge with analytical expertise.

In practice, this ideal is rarely realised, and the grammar emerges from an asymmetrical exchange in which the linguist learns from speakers while simultaneously imposing a framework of description. This asymmetry raises questions about authority: whose language is being described, and from whose perspective? Even when collaboration is present, the grammar often speaks in the voice of the analyst, translating lived linguistic practice into categories that may not exist for the speakers themselves. Thus, the grammar becomes a site where different forms of knowledge intersect and sometimes conflict. The constraints under which grammars are produced—time, funding, institutional expectations—further shape their form. Comprehensive grammars may take decades, yet many are produced under the pressure of academic timelines, forcing prioritisation and simplification. What is presented as a complete description is often a strategic selection, a compromise between ideal completeness and practical feasibility. This incompleteness is not a failure but a structural condition of grammaticography, reflecting the impossibility of fully capturing a living system. The presentation of grammatical information, down to the level of examples and terminology, reinforces this condition. Interlinear glossing, for instance, creates the illusion of precise form-meaning correspondence, yet it necessarily reduces complex relationships to simplified mappings. Terminology, inherited from classical traditions, imposes categories that may not fit the language being described, leading to distortions that are often invisible because they are embedded in the descriptive framework itself.

Even visual tools—tables, diagrams, layouts—shape interpretation, guiding the reader toward certain understandings while obscuring others. The grammar, in this sense, is not only a text but a technology of representation, structuring how language can be seen and thought. The inclusion of texts within grammars offers a partial remedy, grounding abstract descriptions in actual usage. Yet even here, the selection and annotation of texts mediate the language, presenting it through the lens of the grammar's categories. The text becomes evidence, but evidence already interpreted. The distinction between semasiological and onomasiological approaches further highlights the difficulty of capturing language. Whether one starts from forms and moves to meanings, or from meanings to forms, each perspective reveals certain aspects while concealing others. A complete grammar would require the integration of both, yet such integration remains an aspiration rather than a fully realised practice. What emerges from this reflection is that grammaticography is not merely a neglected subfield but a central problem for the understanding of language itself. To write a grammar is to confront the limits of representation, to recognise that language exceeds any attempt to fix it in a definitive form. The grammar is both a necessary tool and an inevitable reduction, a bridge between living speech and abstract knowledge that can never fully span the gap it seeks to cross.

Mosel, U. (2006) 'Grammaticography: The Art and Craft of Writing Grammars', in Ameka, F.K., Dench, A. and Evans, N. (eds.) *Catching Language: The Standing Challenge of Grammar Writing*. Berlin: Mouton de Gruyter.

The Kingdom Against the Crowd: Chomsky and the Silence of Society

Tom Wolfe in 'The Kingdom of Speech' reconstructs the rise of Noam Chomsky not merely as a scientific breakthrough but as a decisive rupture in the understanding of language, where speech

was removed from the social world and relocated inside the skull as a private, biological mechanism. In this reconfiguration, language ceased to be a shared human practice and became an internal organ, a hidden system of rules unfolding independently of history, culture, and interaction. What had once been the domain of anthropology, sociology, and lived communication was transformed into a quasi-mathematical object, purified of contingency and elevated into the realm of abstraction. The audacity of this move explains both its extraordinary success and its profound consequences. By proposing an innate universal grammar, Chomsky offered linguistics the prestige of the hard sciences, promising certainty, elegance, and formal precision. Yet this transformation came at a cost: language was no longer something people do together, but something the mind generates alone. The speaking human was replaced by a silent cognitive machine. In this new paradigm, the diversity of languages across the world became superficial variation, mere surface differences masking a deeper, invariant structure. The richness of linguistic life—its dialects, its improvisations, its historical shifts—was reduced to evidence for an underlying uniformity.

Even the hypothetical Martian observer, invoked to reinforce this vision, would perceive not multiplicity but sameness, not plurality but repetition. Language, in this sense, became less a human phenomenon than a logical system instantiated in human biology. This move also entailed a radical dismissal of empirical engagement. Fieldwork, with its unpredictability and resistance to neat categorisation, was relegated to a secondary role. The linguist no longer needed to travel, to listen, to immerse themselves in unfamiliar forms of life; instead, they could rely on introspection and formal reasoning. Language was to be discovered not in the world but in the mind, not in interaction but in structure. This methodological shift created a paradox: a theory of language that claimed universality while withdrawing from the very diversity it sought to explain. The authority of the theory rested not on the breadth of its data but on the elegance of its internal logic. Yet it is precisely at this point that the system begins to fracture. The challenge posed by Daniel Everett and the Pirahã language exposes the vulnerability of a model built on universality. If even a single language appears to violate the supposed universal principles—if recursion, for instance, is absent—then the entire edifice is called into question. Everett's argument does more than introduce an anomaly; it reopens the question that Chomsky had attempted to close: is language primarily biological or cultural? In presenting the Pirahã as a community whose language reflects its immediate, experience-bound culture, Everett returns language to the social world from which it had been abstracted.

Language becomes once again a practice shaped by life, not a structure imposed by nature. The intensity of the reaction to Everett's claims reveals the stakes of the debate. This is not merely a disagreement over data but a conflict between two visions of language: one that sees it as an internal, universal system, and another that understands it as a contingent, socially embedded phenomenon. The former seeks certainty and invariance; the latter accepts variability and context. The former aspires to the status of science; the latter remains entangled with the humanities. In this confrontation, what is at issue is not only the origin of language but its meaning as a human capacity. If language is innate and universal, then it belongs to biology; if it is shaped by culture, then it belongs to history. The persistence of Chomsky's influence, despite mounting critiques, suggests that his model satisfies a deeper intellectual desire: the desire for order, for simplicity, for an explanation that reduces complexity to a single principle. Universal grammar offers such an explanation, presenting language as a closed system governed by internal rules. Yet this very closure may be its limitation. By excluding the social, the historical, and the experiential, the theory risks becoming detached from the phenomenon it seeks to explain. Language, stripped of its context, becomes an abstract object, elegant but inert. The alternative perspectives emerging from

scholars like Michael Tomasello and Vyvyan Evans attempt to reverse this movement, reintroducing interaction, cognition, and culture into the study of language. They do not deny the biological basis of language but refuse to reduce it to biology alone. Instead, they emphasise usage, learning, and the gradual emergence of structure from communicative practice. In this view, language is not given but made, not fixed but evolving. It is a product of human interaction, continuously reshaped by those who use it. What emerges from this tension is a deeper insight into the nature of language itself.

Language is neither purely biological nor purely cultural; it is a hybrid phenomenon, situated at the intersection of mind and society. Any attempt to reduce it to one dimension inevitably distorts it. Chomsky's achievement lies in revealing the structural dimension of language, but his limitation lies in isolating it from its social roots. Everett's challenge, and the broader shift toward usage-based theories, reopens the space in which language can be understood as a living practice, embedded in human life. The question is not simply which model is correct, but how these perspectives can be reconciled without collapsing one into the other. In this unresolved tension, the study of language finds its true object: not a fixed system, but a dynamic process, constantly negotiating between structure and use, between universality and difference, between the silence of the mind and the noise of the world.

Wolfe, T. (2016) 'The Origins of Speech: In the Beginning Was Chomsky', Harper's Magazine, August.

The Invention Against Evolution: Language Beyond Darwin and Chomsky

Tom Wolfe in 'The Kingdom of Speech' advances a deliberately disruptive thesis, positioning language not as an evolutionary inevitability nor as an innate biological structure, but as a radical human invention that resists absorption into both Darwinian gradualism and Chomskyan universalism. In doing so, Wolfe reframes the history of linguistics as a struggle between competing explanatory regimes, each seeking to domesticate language within a broader theoretical order. On one side stands Charles Darwin, whose theory of natural selection attempts to situate language within the continuum of biological adaptation; on the other stands Noam Chomsky, who relocates language into an internal, pre-wired cognitive organ, thereby severing it from historical contingency while preserving its status as a natural phenomenon. Wolfe's intervention consists in rejecting both moves, arguing that language escapes these frameworks precisely because it is neither an adaptation nor an organ, but a constructed practice emerging from human creativity and cultural necessity. This repositioning destabilises the assumption that language must be explained by the same principles that govern other aspects of life. Instead, it invites a reconsideration of language as an anomaly within evolution—a phenomenon that cannot be reduced to incremental selection pressures or encoded biological structures.

In this context, Wolfe resurrects the marginalised figure of Alfred Russel Wallace, whose divergence from Darwin on the question of human intellect and language becomes emblematic of an alternative trajectory. Wallace's insistence that human cognitive capacities exceed the explanatory reach of natural selection is presented not as a failure but as an insight prematurely suppressed by the consolidation of Darwinian orthodoxy. Wolfe thus constructs a counter-history in which the dominant narrative of evolution is revealed as contingent, shaped by intellectual authority rather than empirical necessity. This gesture mirrors his treatment of Chomsky, whose transformation of linguistics into a formal, quasi-scientific discipline is both acknowledged and critiqued. The concept of a universal grammar, while offering a powerful unifying principle, is

portrayed as an abstraction that detaches language from the lived realities of its use. By privileging internal structure over external variation, Chomsky's framework produces a vision of language that is elegant but insulated, coherent yet disconnected from the diversity it claims to subsume. The emergence of Daniel Everett as a challenger to this framework becomes, in Wolfe's narrative, a pivotal moment in which the suppressed dimension of language—its cultural embeddedness—reasserts itself. The Pirahã language, with its apparent resistance to recursion and its alignment with the immediate experiential world of its speakers, functions as a disruptive case that exposes the limits of universality.

Whether or not Everett's claims withstand all scrutiny is, in Wolfe's account, secondary to the fact that they reopen the possibility that language is shaped by culture rather than dictated by biology. In this sense, the Pirahã do not merely challenge a specific hypothesis; they challenge the very ambition to locate language within a universal, invariant structure. Wolfe's broader claim—that language is a cultural artifact—follows from this confrontation. If language is invented, then it is inherently plural, contingent, and historical. It cannot be fully captured by models that seek to reduce it to a single origin or principle. Instead, it must be understood as a process of continuous creation, in which communities generate and transform systems of communication in response to their specific conditions of life. This perspective restores to language its unpredictability and its resistance to closure. It also reintroduces the human as an active agent, not merely a bearer of biological capacities but a creator of symbolic forms. Yet this emphasis on invention raises its own tensions. To declare language an invention risks severing it entirely from biology, replacing one reduction with another. The challenge, then, is to think language in a way that preserves its cultural specificity without denying its biological grounding. Wolfe's provocation lies precisely in forcing this question into view, refusing the comfort of established explanations and insisting on the strangeness of language as a human phenomenon. His tone—irreverent, confrontational, often deliberately exaggerated—serves to unsettle the authority of scientific discourse, exposing its rhetorical dimensions and its dependence on consensus.

In this sense, the style of the argument is inseparable from its content: both seek to disrupt, to provoke, to reopen questions that have been prematurely settled. The result is not a definitive theory of language but a reconfiguration of the problem itself. Language emerges not as a solved puzzle but as a site of ongoing conflict between competing interpretations, each illuminating certain aspects while obscuring others. In rejecting both Darwinian adaptation and Chomskyan innateness, Wolfe does not so much provide an alternative as create a space in which the origins of speech can once again be contested. This space, marked by uncertainty and plurality, may be closer to the reality of language than any unified theory. For language, as Wolfe suggests, is not simply something that evolved or something that exists within us; it is something that humans continually make, and in making it, continually remake themselves.

Wolfe, T. (2016) The Kingdom of Speech. New York: Little, Brown and Company.

The Silence After Darwin: When Language Broke Evolution

Tom Wolfe in 'The Kingdom of Speech' portrays the nineteenth-century confrontation between Charles Darwin and Max Müller as a decisive rupture, where the ambition to subsume language under evolution encountered a limit it could not cross. Müller's public challenge did not merely question a detail within Darwin's theory; it exposed a structural absence, a gap at the very centre of evolutionary explanation. Darwin, who had extended natural selection to encompass the entirety of life, now faced a phenomenon that resisted incorporation. Language, unlike anatomy or instinct,

left no fossil trace, no observable gradation, no clear lineage. It existed only in its full human form, already complete, already irreducible. This absence of intermediate stages was not a minor inconvenience but a fundamental problem, threatening the continuity upon which evolutionary reasoning depended. Darwin's response was not retreat but expansion. In 'The Descent of Man', he sought to bridge the divide by extending analogy to its limits, tracing human capacities back to animal behaviours through a chain of speculative connections. Language became birdsong, morality became canine loyalty, religion became the devotion of a dog to its master. These analogies were not empirical demonstrations but imaginative reconstructions, attempts to preserve the coherence of a theory by filling its gaps with narrative continuity. The elegance of the system was maintained, but at the cost of evidential solidity. What emerged was not proof but plausibility, not demonstration but suggestion.

The figure of Alfred Russel Wallace intensifies this crisis. As a co-discoverer of natural selection, Wallace's divergence on the question of human uniqueness carries particular weight. His insistence that human intellect and language exceed the explanatory reach of natural selection introduces a fracture within the evolutionary paradigm itself. Wolfe presents this divergence not as an eccentric deviation but as a suppressed alternative, one that recognises the limits of reduction. In Wallace's hesitation, language appears not as a gradual adaptation but as a discontinuity, an emergence that cannot be fully accounted for by the mechanisms that explain other traits. Darwin's refusal to accept this limit leads to an increasingly strained expansion of his framework. The notion of a 'musical protolanguage', derived from birdsong and shaped by sexual selection, attempts to reconcile the expressive qualities of speech with evolutionary continuity. Yet this hypothesis reveals the difficulty of the task. By grounding language in sound without meaning, Darwin separates form from function, leaving unexplained the transition from melody to signification. The cooing of mothers, the calls of birds, the aesthetic preferences of mates—all provide a context for vocalisation, but none account for the emergence of symbolic reference. The leap from sound to meaning remains unbridged. The same logic extends to other traits, where sexual selection and analogy are used to explain features that resist direct observation. Hairlessness becomes a matter of aesthetic preference, morality a refinement of social instinct. Each explanation preserves the continuity of the theory, yet each relies on conjecture where evidence is lacking. The accumulation of such conjectures produces a paradox: the more comprehensive the theory becomes, the more it depends on elements that cannot be empirically verified. The reaction of the linguistic community reflects this impasse.

The bans imposed by the Philological Society of London and the Linguistic Society of Paris mark not a resolution but a suspension, an acknowledgement that the question of language origins had become intractable within existing frameworks. This institutional silence constitutes what Wolfe calls a 'dark age', not because inquiry ceased entirely, but because the central problem was set aside as unsolvable. Language, the defining feature of humanity, became the one phenomenon that could not be explained. The subsequent developments in biology and linguistics do not resolve this tension but reconfigure it. The rediscovery of Mendelian genetics introduces a new model of inheritance, one that is experimentally grounded and mathematically precise. In comparison, Darwin's speculative extensions appear increasingly fragile. The 'modern synthesis' restores coherence to evolutionary theory by integrating genetics, yet it does so by narrowing its focus, leaving aside those aspects—such as language—that resist quantification. The famous assertion that nothing in biology makes sense except in the light of evolution thus carries an implicit exclusion: language remains an anomaly within this illumination. The re-emergence of linguistics in the mid-twentieth century, driven by practical demands and technological collaboration, signals not a resolution but a shift in perspective. Figures like Morris Swadesh attempt to introduce

empirical methods, measuring language change through lexicostatistics and glottochronology. These approaches bring a new form of rigour, yet they address the history of languages rather than their origin.

The fundamental question—how language itself emerged—remains untouched. The collaboration with engineers and the influence of institutions such as MIT further align linguistics with the hard sciences, preparing the ground for the later dominance of formal theories. Yet this alignment, as Wolfe suggests elsewhere, risks repeating the earlier move: transforming language into an abstract system while leaving its origin unresolved. What persists through these transformations is the recognition that language occupies a singular position. It is both central and elusive, essential and unexplained. Darwin's failure is not simply a failure of evidence but a revelation of the limits of a certain mode of explanation. By attempting to universalise his theory, he encountered a phenomenon that resists universality, a human capacity that cannot be fully reduced to biological continuity. The 'dark age' that follows is thus not merely a historical period but a conceptual condition, one in which language remains suspended between competing explanations, belonging fully to none. In this suspension, language reveals its dual nature: at once biological and cultural, continuous and discontinuous, part of nature yet exceeding its explanatory frameworks.

Wolfe, T. (2016) The Kingdom of Speech. New York: Little, Brown and Company.

The Firewall of Speech: When Culture Breached the System

Tom Wolfe in 'The Kingdom of Speech' presents the publication of Daniel Everett's 'Don't Sleep, There Are Snakes' as a decisive breach in the intellectual enclosure that had long protected the doctrine of universal grammar, a moment when lived experience collided with theoretical closure and exposed the fragility of a system sustained more by consensus than by uncontested evidence. Everett's narrative, grounded in three decades among the Pirahã, does not merely offer an alternative hypothesis; it reintroduces into linguistic thought what had been systematically excluded—risk, contingency, embodiment, and the irreducible specificity of human life. The jungle is not simply a backdrop but a counter-epistemology, a space where language is inseparable from survival, where communication emerges not as an abstract system but as a practice embedded in danger, illness, cooperation, and immediate experience. The episodes of fever, exhaustion, and near death are not anecdotal embellishments but reminders that language is lived before it is theorised, endured before it is formalised. Against the purified interiority of Chomsky's 'language organ', Everett offers a language that is external, fragile, and contingent, shaped by the conditions under which it is spoken.

This contrast reveals the deeper conflict at stake: not merely between two theories, but between two ontologies of language—one internal and universal, the other external and particular. The Pirahã language, in this context, functions as both evidence and provocation. Its apparent lack of recursion does not simply challenge a technical feature of universal grammar; it undermines the necessity of universality itself. If a language can function without what has been posited as its defining property, then the claim to universality collapses into a claim about preference, about what certain theories require rather than what languages exhibit. Everett's insistence that language adapts to culture rather than emerging from a fixed biological template restores variability as a constitutive feature rather than a deviation. Language becomes once again plural, shaped by the needs, constraints, and practices of specific communities. This shift transforms the problem of language from one of uncovering hidden structures to one of understanding situated practices. The response from the academic establishment, characterised by Wolfe as a 'truth squad', illustrates

the defensive mechanisms of a paradigm under threat. The publication of rebuttals in specialised journals contrasts sharply with the public resonance of Everett's work, revealing a division between institutional authority and broader intellectual curiosity. The failure of the critique to extend beyond academic circles suggests that the authority of a theory does not guarantee its persuasive power outside the structures that sustain it.

Everett's narrative, by crossing the boundary between academic discourse and public engagement, disrupts this containment, forcing the debate into a wider arena where its assumptions can be questioned more freely. This expansion of the audience is itself significant, as it redefines who has the right to participate in the discussion of language and its origins. The subsequent alignment of scholars such as Michael Tomasello and Vyvyan Evans with Everett's critique signals a broader shift, in which the dominance of universal grammar is no longer taken for granted. The characterisation of universal grammar as 'a myth' does not simply negate a theory; it reframes it as a narrative, a construction that has achieved authority through repetition and institutional reinforcement. This reframing destabilises the boundary between science and belief, suggesting that even the most formal theories are embedded in interpretive frameworks that shape what counts as evidence and how it is evaluated. Everett's later work, particularly 'Language: The Cultural Tool', extends this critique by proposing a model of language as an artifact, analogous to other human inventions. This analogy, while provocative, shifts the emphasis from origin to function, from emergence to use. Language is no longer something that happened once in evolutionary time but something that continues to be made and remade. It becomes a technology of memory and coordination, a system for encoding and transmitting knowledge across individuals and generations.

In this view, language does not simply reflect human capacities; it amplifies them, enabling forms of planning, cooperation, and imagination that would otherwise be impossible. The notion of language as a catalyst rather than a product of evolution reverses the traditional explanatory direction, suggesting that language transforms the conditions under which evolution operates. The parallel movement within Chomsky's own work, toward increasingly abstract formulations such as the Strong Minimalist Thesis, underscores the divergence between these perspectives. As the theory becomes more refined, it also becomes more removed from empirical contestation, culminating in the admission that the origins of language remain an enigma. This admission, rather than resolving the debate, reopens it, revealing that the search for a definitive explanation has reached its limits. Everett's alternative, by contrast, embraces this openness, offering not a final answer but a different way of posing the question. The concept of speech as a 'fourth kingdom' encapsulates this reorientation.

Language is neither purely natural nor purely artificial; it occupies a space of its own, a domain in which humans create the conditions of their own existence. This domain is not governed by a single principle but by a multiplicity of practices, constantly evolving and resisting closure. In this sense, the firewall that Wolfe describes is not merely a barrier protecting a theory but a boundary between different ways of understanding language itself. Everett's work breaches this boundary, not by replacing one system with another, but by exposing the impossibility of containing language within any single system. What emerges is not a new orthodoxy but a renewed uncertainty, in which language appears once again as a problem rather than a solution, as an invention whose consequences exceed the frameworks designed to explain it.

Wolfe, T. (2016) The Kingdom of Speech. New York: Little, Brown and Company.

From Gesture to Syntax: Mapping the Language-Ready Brain

Michael A. Arbib in the edited volume *How the Brain Got Language: Towards a New Road Map* presents not a single theory of linguistic origin, but a coordinated attempt to redraw the intellectual terrain upon which such theories can be meaningfully articulated. Emerging from a collaborative workshop, the work does not treat language as a sudden invention but as a layered process unfolding across biological inheritance, neural plasticity, social interaction, and cultural transmission. It proposes that the question of how language emerged cannot be answered within the limits of a single discipline, but only through a synthetic framework that brings together evolutionary biology, neuroscience, primatology, and the study of social behaviour. At the centre of this reorientation stands the notion of the language-ready brain. This concept resists the temptation to equate language with a fixed biological endowment. Instead, it suggests that early humans possessed neural architectures capable of supporting structured communication, yet these architectures required cultural elaboration to become fully linguistic. Language, in this sense, is neither purely innate nor purely constructed, but emerges from the recursive interaction between biological potential and social practice. The brain does not contain language in advance; it contains the conditions for its emergence.

The methodological core of this approach is comparative neuroprimatology, a perspective that seeks to understand human language by situating it within the broader continuum of primate cognition and communication. By examining the brains and behaviours of monkeys and apes, the research reconstructs plausible evolutionary trajectories leading from shared ancestors to modern humans. This reconstruction is not linear but speculative and multi-directional, relying on converging evidence from neural structures, motor control, vocalisation patterns, and social interaction. The aim is not to identify a single origin point, but to trace a series of transformations through which communicative capacities gradually acquired linguistic properties. One of the most influential frameworks revisited in this context is the Mirror System Hypothesis, which links the evolution of language to neural systems originally involved in action recognition and imitation. The hypothesis proposes that the capacity to understand and reproduce goal-directed actions provided the foundation for gesture-based communication, which in turn evolved into more abstract symbolic systems. Yet the volume does not treat this hypothesis as definitive. Instead, it opens it to revision, suggesting that the transition from manual action to protosign and protolanguage may have involved multiple interacting systems rather than a single neural pathway. Language is thus reimagined as an emergent coordination of perception, action, and cognition, rather than the product of a specialised module.

The investigation begins with the macaque, not as a primitive version of the human, but as a point of divergence that reveals both continuity and difference. Studies of macaque brains highlight the role of mirror neurons not only in motor imitation but in the integration of visual and social information. These findings suggest that the neural mechanisms underlying communication are deeply embedded in systems of action and perception. At the same time, they reveal the limits of such systems, indicating that the transition to language required not only quantitative expansion but qualitative transformation. The brain did not simply become larger; it became differently organised. Emotion enters this landscape not as an accessory to communication but as one of its generative conditions. The overlap between emotional expression and vocal or gestural signalling suggests that early forms of communication were inseparable from affective states. Language, in this view, does not emerge from neutral information exchange but from the need to coordinate attention, intention, and feeling within social groups. The evolution of social cognition, including the ability to interpret and respond to the mental states of others, becomes a crucial precondition

for linguistic complexity. Gesture and vocalisation are not merely tools; they are extensions of embodied interaction.

The social dimension of language is further developed through the analysis of turn-taking and prosocial behaviour. Communication is shown to depend on patterns of cooperation, trust, and mutual responsiveness. The capacity to take turns in interaction reflects a deeper temporal structure in which individuals align their actions and expectations. Such alignment cannot be reduced to individual cognition; it is a property of social systems. The suggestion that cooperative breeding may have played a role in language evolution underscores the importance of shared responsibility and interdependence in shaping communicative practices. Language emerges not from isolated minds but from coordinated communities. Imitation and pantomime provide another layer of this developmental narrative. These behaviours demonstrate how complex meanings can be conveyed without fully developed linguistic systems. Pantomime, in particular, reveals a capacity for representing actions and events through embodied simulation, bridging the gap between perception and symbolic expression. In developmental contexts, the transition from action to gesture illustrates how children move from direct interaction with the world to mediated forms of communication. This transition is not abrupt but gradual, suggesting that the roots of language lie in the transformation of action into representation.

The connection between action and language is further explored through the study of tool-making. The processes involved in creating and using tools require hierarchical planning, sequencing, and the coordination of multiple cognitive resources. These same capacities are implicated in linguistic structure, particularly in the organisation of syntax and narrative. The emerging field of neuro-archaeology attempts to reconstruct the cognitive demands of early technologies, offering indirect evidence for the neural conditions of language evolution. Tool-making thus becomes not only a technological activity but a window into the cognitive architecture that supports linguistic complexity. The final movement of this inquiry turns towards meaning and grammar, where the focus shifts from the origins of communication to the emergence of structured language. The ability to process sequences, to combine elements according to rules, and to represent abstract relationships marks a qualitative shift in cognitive capacity. Neural regions associated with these functions, such as those linked to syntactic processing, suggest that language involves specialised forms of organisation within the brain. Yet even here, the emphasis remains on emergence rather than design. Grammar is not imposed from outside but arises from the repeated coordination of cognitive and social processes.

The proposed roadmap does not culminate in a definitive answer but in a reconfiguration of the problem itself. By integrating biological, behavioural, and cultural perspectives, it dissolves the boundaries that have traditionally separated these domains. Language is no longer treated as an isolated phenomenon but as a dynamic system shaped by multiple interacting forces. The question of how the brain got language becomes inseparable from the question of how humans became the kinds of beings for whom language is possible. What emerges from this synthesis is not a single origin story but a field of tensions and possibilities. Language appears as a threshold phenomenon, situated between action and representation, biology and culture, individual cognition and collective practice. The brain, in becoming language-ready, does not simply acquire a new function; it enters into a new mode of being, one in which meaning is continuously negotiated, transformed, and transmitted across generations.

Michael A. Arbib (ed.) (2018) How the Brain Got Language: Towards a New Road Map. Oxford: Oxford University Press.

Rhythms Before Words: The Affective Architecture of Speech

Uwe Seifert in ‘Bringing in Emotion: Relating the Evolution of Music-Readiness and Language-Readiness within Comparative Neuroprimatology’ develops a decisive shift in the study of language origins by situating speech not only within cognition and action, but within rhythm, affect, and collective experience. The argument unfolds from the premise that language-readiness cannot be fully understood unless one recognises its entanglement with music-readiness, a parallel evolutionary capacity rooted in the temporal and emotional structuring of behaviour. Language does not emerge from silence into meaning, but from rhythm into articulation. At the core of this reconfiguration lies the rhythm-first hypothesis, which proposes that rhythm precedes melody, and by implication, precedes structured language. Rhythm is not treated as an aesthetic supplement, but as a primordial organiser of embodied existence. It is grounded in movement—in the repetitive gestures of clapping, stamping, swaying—that synchronise the body with others and with the environment. Before pitch becomes meaningful, before tone becomes differentiated, there is repetition. This repetition is not empty; it is the first form of shared structure, a temporal grid within which coordination becomes possible. Rhythm thus appears as the earliest bridge between isolated organisms and collective behaviour.

From this perspective, the emergence of language cannot be reduced to symbolic reference alone. It must be traced back to the capacity to align actions in time, to anticipate and respond within a shared pulse. The body becomes the first medium of communication, and rhythm becomes the first grammar—not of propositions, but of coordination. What later appears as syntax may already be latent in the patterned sequencing of movement. The combinatoriality hypothesis extends this logic by proposing that both music and language derive their structural richness from processes of segmentation and recombination. Through complex imitation, continuous flows of action and sound are broken into discrete units, which can then be rearranged into new configurations. This fractionation is not merely technical; it marks a transformation in how experience is organised. The world is no longer encountered as an undifferentiated stream, but as a set of manipulable elements. In this sense, combinatoriality is the cognitive condition for both musical variation and linguistic productivity. What is crucial here is that these capacities are not independent inventions but share a common neural substrate. Systems originally evolved for action recognition and imitation become repurposed for structuring sequences of sound and gesture. The mirror system does not simply reflect; it generates patterns that can be repeated, modified, and transmitted. In this transformation, rhythm provides the scaffolding upon which more complex forms—melody, prosody, syntax—can emerge. Language inherits its combinatorial power from these earlier mechanisms of patterned imitation.

Yet the most profound dimension of this account lies in the socio-affect-cohesion hypothesis, which relocates the origin of communication within the domain of emotion. Music is understood not primarily as a carrier of information, but as a regulator of affect. It reduces individual distress, induces shared emotional states, and binds individuals into cohesive groups. Rhythm synchronises not only movement but feeling, creating a collective emotional field in which individual boundaries are temporarily dissolved. In this light, the emergence of language appears as a secondary development built upon this affective foundation. Before humans could exchange propositions, they had to share moods. Before they could describe the world, they had to inhabit it together. Prosody—the rhythmic and intonational contour of speech—retains this origin, carrying emotional cues that precede and often override semantic content. Language, therefore, is never purely propositional; it is always already affective, shaped by the rhythms of the body and the

dynamics of social interaction. This integration of music-readiness into the broader framework of comparative neuroprimatology transforms the understanding of communication from a system of signals into a system of synchronisations. The focus shifts from what is said to how it is temporally and emotionally organised. Turn-taking, for instance, is not merely a conversational rule but a rhythmic exchange, a coordination of timing that reflects deeper capacities for mutual attunement. Similarly, the evolution of social cohesion cannot be separated from the capacity to move and feel together in time.

The implications extend further when one considers the relationship between biological and cultural evolution. While the neural substrates for rhythm and affect may be biologically grounded, their elaboration into music, dance, and language depends on cultural practices. Rituals, collective performances, and shared symbolic systems amplify and stabilise these capacities, allowing them to develop into complex forms of communication. Language, in this sense, is not simply encoded in the brain but enacted in social life, continually reshaped by the rhythms of cultural interaction. What emerges from this account is a reversal of conventional hierarchies. Rather than viewing music as a derivative or ornamental aspect of human communication, it becomes foundational. Rather than treating emotion as secondary to cognition, it becomes the ground upon which cognition operates. And rather than locating language in abstract structures, it is traced back to embodied practices of synchronisation and imitation. The evolution of speech thus appears not as the sudden appearance of symbolic capacity, but as the gradual layering of structure upon rhythm, of meaning upon affect, of articulation upon movement. The language-ready brain is not a machine for producing sentences, but a dynamic system capable of aligning bodies, coordinating actions, and sharing emotional states across individuals and groups. In this system, rhythm is not an accessory to language; it is its hidden origin and persistent condition.

Seifert's contribution ultimately reframes the study of language evolution as the study of how humans became capable of living in shared temporal worlds. Language does not simply describe reality; it organises it, synchronises it, and makes it collectively inhabitable. The road to language, therefore, does not begin with words, but with the pulse that makes words possible.

Seifert, U. (2018) 'Bringing in Emotion: Relating the Evolution of Music-Readiness and Language-Readiness within Comparative Neuroprimatology', in Arbib, M. A. (ed.) How the Brain Got Language: Towards a New Road Map. Oxford: Oxford University Press.

The Desire to Speak: Emotion as the Engine of Language

Katerina Semendeferi in 'Why Do We Want to Talk? Evolution of Neural Substrates of Emotion and Social Cognition' advances a fundamental inversion in the understanding of language by arguing that the impulse to communicate does not originate in abstract cognition but in the reorganisation of emotional and motivational systems within the brain. Language is not simply a tool that humans possess; it is an activity they are compelled toward, driven by neural circuits that evolved not for syntax, but for social survival. The question is not how humans can speak, but why they cannot remain silent. At the centre of this argument lies the limbic system, a network traditionally associated with emotion, attention, and motivation, now revealed as a decisive substrate for communication itself. The evolution of human language is thus inseparable from the transformation of this system, particularly in structures such as the amygdala, orbitofrontal cortex, and anterior cingulate cortex. These are not peripheral to language; they provide its conditions of possibility. They determine what is worth saying, when it should be said, and how it will be received.

The amygdala, enlarged and structurally differentiated in humans, becomes a site for the nuanced processing of social signals. It evaluates the emotional salience of stimuli, allowing individuals to navigate complex interpersonal environments. In this sense, language is already prefigured in the ability to detect significance in others—to read faces, gestures, and tones before words are even formed. The orbitofrontal cortex extends this capacity by integrating sensory and emotional information into decision-making processes, enabling individuals to select appropriate communicative responses within shifting social contexts. Communication, therefore, is not merely expressive; it is strategic, guided by continuous evaluation of emotional landscapes. The anterior cingulate cortex further intensifies this integration by linking motivation with action. It mediates attention, error detection, and behavioural adjustment, connecting internal states with external expression. Its connections with classical language areas, including those involved in speech production, suggest that the act of speaking is inseparable from systems that monitor intention and regulate behaviour. Speech emerges not as an automatic output, but as a controlled response shaped by emotional and motivational demands.

From this perspective, the desire to communicate appears as an emergent property of a reorganised neural economy. Humans do not speak simply because they can, but because their brains have evolved to prioritise social interaction. The drive to share information, to signal intentions, to align with others, becomes embedded in the very architecture of the brain. Language is thus grounded in a deeper imperative: the need to belong, to influence, and to be recognised within a social group. Insights from neurodevelopmental conditions sharpen this argument by revealing how fragile this integration can be. In Williams syndrome, individuals display heightened sociability and relatively fluent expressive language, despite cognitive limitations. This suggests that the enhancement of emotional and social circuits can sustain communication even when other cognitive capacities are reduced. By contrast, autism spectrum disorder demonstrates how disruptions in these same circuits impair social communication, even when linguistic structures may be partially intact. These contrasting profiles indicate that language cannot be reduced to grammar or vocabulary; it depends on the proper functioning of systems that regulate emotion and social cognition.

Such evidence reinforces the idea that language is not an isolated faculty but a convergence point of multiple neural processes. Even minor alterations in limbic structures can have profound effects on communication, revealing the delicate balance required for effective interaction. The capacity to speak is therefore contingent upon the capacity to feel, to attend, and to interpret the intentions of others. Evolutionarily, these developments correspond to significant changes in the human brain following divergence from common ancestors with other primates. While no entirely new structures emerged, existing systems underwent substantial reorganisation, particularly within fronto-limbic networks. The expansion and specialisation of the amygdala enhanced sensitivity to social cues, while the anterior insula integrated emotional and cognitive processes, supporting forms of empathy that enable individuals to infer and respond to the internal states of others. The cingulate cortex adapted to facilitate intentional communication, linking emotional states with motor actions in a coordinated manner. These transformations reflect increasing pressures to manage complex social environments, where communication becomes essential not only for cooperation but for survival. Language emerges as a solution to the problem of social complexity, but one that is grounded in emotional attunement rather than purely symbolic reasoning. The brain becomes language-ready not by acquiring a new module, but by reorganising existing systems to support more intricate forms of interaction.

The transition from gesture to language further illustrates this process. Early forms of communication likely relied on gesture-based systems, supported by neural loops connecting

motor and limbic regions. These systems allowed actions to be imbued with emotional significance, transforming movement into meaning. Over time, these embodied forms of expression became increasingly abstract, giving rise to protolanguage and eventually to fully developed linguistic systems. Yet even in this transformation, the emotional substrate remains intact, continuing to shape how language is produced and understood. Prolonged developmental periods in humans amplify this dynamic by allowing extended phases of learning and cultural transmission. The brain does not simply mature biologically; it is sculpted through interaction, absorbing patterns of communication that reflect both cognitive structures and emotional norms. Language, therefore, is not only inherited but cultivated, emerging from the interplay between neural predispositions and social environments.

What this account ultimately reveals is that the evolution of language cannot be separated from the evolution of desire. Humans speak because they are driven to connect, to influence, and to participate in shared worlds of meaning. The limbic system, far from being a primitive residue, becomes the engine of this process, transforming communication from a technical capacity into a fundamental aspect of human existence. Language, in this light, is not the triumph of reason over emotion, but the expression of their integration. It is a system that encodes not only what is thought, but what is felt, desired, and valued. To understand why humans want to talk is therefore to understand how the brain has been reshaped to make communication not optional, but necessary.

Semendeferi, K. (2018) 'Why Do We Want to Talk? Evolution of Neural Substrates of Emotion and Social Cognition', in Arbib, M. A. (ed.) How the Brain Got Language: Towards a New Road Map. Oxford: Oxford University Press.

Cooperation Without Innocence: The Strategic Origins of Dialogue

Federico Rossano in 'Social Manipulation, Turn-Taking, and Cooperation in Apes: Implications for the Evolution of Language-Based Interaction in Humans' dismantles one of the most persistent assumptions about communication—that it is fundamentally grounded in altruism—and replaces it with a more unsettling but empirically grounded account in which interaction emerges from a complex interplay of strategy, self-interest, and situational cooperation. Language, in this view, is not the natural expression of shared goodwill, but the refined outcome of negotiated engagement between agents whose motivations are often opaque, competitive, and contingent. The starting point of this argument lies in a reconsideration of cooperation itself. Human communication appears deeply cooperative, structured by expectations of responsiveness, relevance, and mutual understanding. Yet this cooperation does not necessarily arise from prosocial dispositions. One may assist, respond, or engage not out of altruism, but due to social pressure, fear of reputational loss, adherence to norms, or the anticipation of indirect benefits. The act of responding to another's communicative signal, therefore, cannot be taken as evidence of benevolence; it is instead an index of participation within a system where interaction is expected and often unavoidable.

This shift in perspective redirects attention from the structure of signals to the motivations underlying their uptake. The evolution of language cannot be explained solely by the emergence of increasingly complex forms of expression; it must also account for why individuals choose to respond, to continue an exchange, to enter into the temporal discipline of dialogue. Communication is not only about producing meaning but about sustaining interaction, and this requires a motivational architecture that goes beyond simple signal recognition. Turn-taking becomes the key site where this architecture is revealed. Across species, turn-taking exhibits varying degrees of complexity, from simple repetition to elaborate, context-sensitive exchanges.

In its most basic form, mimetic turn-taking involves the reiteration of signals with minimal transformation, suggesting a rudimentary alignment of behaviour. More advanced forms introduce alternation and differentiation, where distinct signals are produced in sequence, indicating a growing sensitivity to the actions of others. At higher levels, interpretive turn-taking emerges, where responses are tailored to the perceived meaning of preceding signals, allowing for repair, adjustment, and the extension of interaction across multiple turns.

Human conversation represents the most sophisticated form of this system, characterised by rapid transitions, minimal overlap, and a high degree of contextual sensitivity. Yet elements of this complexity are already present in the gestural communication of great apes. These observations suggest that the roots of linguistic interaction lie not in the invention of symbols, but in the progressive refinement of temporal coordination and interpretive responsiveness. Language builds upon these capacities, transforming them into structured systems of exchange, but does not originate them. Crucially, the dynamics of turn-taking are inseparable from the possibility of manipulation. In non-human primates, communicative behaviour often serves strategic ends. Gestures are not fixed signals but are shaped through repeated interactions, a process known as ontogenetic ritualisation, where meaning emerges from use rather than being pre-specified. This plasticity allows individuals to deploy signals in ways that influence the behaviour of others, often to their own advantage. Communication becomes a form of social tool use, where others are engaged not merely as partners, but as means to achieve specific goals.

Examples of such behaviour reveal a pattern in which cooperation is conditional and context-dependent. Requests for resources, such as food, may function less as direct appeals than as tests of social relationships, probing the willingness of others to respond. In some cases, individuals actively manipulate their social partners, guiding their actions to secure desired outcomes. These interactions demonstrate that cooperation can arise without any underlying commitment to mutual benefit; it is sufficient that participation in the interaction yields an advantage, however temporary or asymmetrical. This insight challenges the binary opposition between communication as manipulation and communication as information transfer. Rather than representing mutually exclusive models, these perspectives describe different aspects of the same phenomenon. Signals both convey information and exert influence; they inform and they act. In primate communication, the strategic use of signals often blurs this distinction, as individuals encode information in ways that shape the responses of others. Language, as it evolves, inherits this dual character, functioning simultaneously as a medium of representation and a mechanism of control.

The implications for the evolution of language are profound. If communication systems can arise and stabilise without requiring prosocial motivations, then the origins of language must be located within environments where cooperation and competition coexist. The capacity for turn-taking, the ability to interpret and respond to signals, and the strategic deployment of communicative acts all contribute to the formation of increasingly complex interactional systems. Language does not emerge from harmony but from the necessity of navigating a social world in which alignment must be continuously negotiated. In this context, cooperation appears not as a moral foundation but as an emergent property of interaction. Individuals cooperate because interaction demands it, because failing to respond carries costs, or because participation offers opportunities. The stability of communication systems depends not on shared intentions alone, but on the alignment of individual incentives within a structured environment. Language becomes possible when these conditions reach a level of complexity that supports sustained, multi-turn exchanges. What this account ultimately reveals is that the evolution of language is inseparable from the evolution of social strategy. The desire to influence others, to secure resources, to maintain relationships, and to

manage one's position within a group all contribute to the development of communicative capacities. Turn-taking provides the temporal framework within which these strategies operate, while the flexibility of signals allows for their continual adaptation.

Language, therefore, should not be understood as a purely cooperative achievement, but as a system that accommodates both cooperation and manipulation. It is a space where intentions are expressed, concealed, negotiated, and contested. The emergence of such a system reflects not the elimination of conflict, but its organisation within a shared structure of interaction. Rossano's analysis compels a reconsideration of the foundations of communication. It suggests that to understand why humans speak with one another, one must look not only at what they share, but at what they seek to gain. Language arises not from a collective agreement to cooperate, but from the ongoing necessity to engage with others whose interests may align, diverge, or collide. In this tension, dialogue is born—not as an expression of innocence, but as a practice of strategic coexistence.

Rossano, F. (2018) 'Social Manipulation, Turn-Taking, and Cooperation in Apes: Implications for the Evolution of Language-Based Interaction in Humans', in Arbib, M. A. (ed.) How the Brain Got Language: Towards a New Road Map. Oxford: Oxford University Press.

Beyond the Present: Language as Mental Time Travel

Michael C. Corballis in 'Mental Travels and the Cognitive Basis of Language' redefines the origin of language by locating its foundation not in sound, gesture, or even social coordination, but in a deeper cognitive capacity—the ability to escape the present. What distinguishes human communication is not merely its complexity, but its displacement: the power to speak of what is absent, what has passed, what might come, and what has never existed at all. Language begins where immediacy ends. At the centre of this capacity lies what is termed mental time travel, the ability to reconstruct past experiences, simulate future possibilities, and generate entirely fictional scenarios. This capacity transforms cognition into a temporal field, where the mind is no longer bound to the here and now but moves freely across imagined landscapes. Language, in this framework, emerges as the externalisation of this movement. It is not simply a system of signs, but a mechanism for sharing temporal dislocations—an instrument through which private memories, plans, and fantasies become collectively accessible. Crucially, this ability is not presented as an abrupt human invention, but as the result of a gradual evolutionary process. Evidence from nonhuman animals reveals that rudimentary forms of mental time travel are already present in species facing ecological demands that require planning, memory, and flexible behaviour. Chimpanzees demonstrate foresight in preparing tools for future use; birds such as scrub jays recall not only where food is stored but when it was hidden; rodents exhibit neural patterns that replay past trajectories and anticipate future ones. These behaviours suggest that the cognitive foundations of displacement are widely distributed, embedded in systems designed for navigation and survival rather than communication per se.

The implication is that the difference between human and animal minds is not one of kind but of degree. What humans achieve through language is an amplification of capacities that already exist in more limited forms elsewhere in the animal kingdom. Mental time travel, in its early stages, serves practical functions—finding food, avoiding danger, navigating space. In humans, it becomes detached from immediate utility, expanding into narrative, imagination, and culture. Language arises as the medium through which this expansion is stabilised and transmitted. The neural basis of this capacity is closely tied to the hippocampus, a structure central to memory and

spatial navigation. In both humans and animals, the hippocampus supports the replay of past experiences and the simulation of possible futures. Patterns of neural activity observed in rodents reveal sequences that correspond to previously traversed paths, as well as anticipatory patterns that map potential future routes. In humans, similar mechanisms underlie the ability to recall detailed episodes, imagine hypothetical scenarios, and construct coherent narratives. The same system that once guided movement through physical space becomes, in effect, a generator of mental worlds. This transformation has profound implications for the emergence of language. If the mind can traverse time, then communication can extend beyond the immediate context. Language becomes the vehicle through which these internal journeys are shared, allowing individuals to communicate experiences they are not currently undergoing. The past becomes reportable, the future discussable, the imaginary narratable. Displacement thus appears not as a peripheral feature of language, but as its defining condition.

The relationship between mental time travel and language is not unidirectional. As language develops, it feeds back into cognition, enhancing the capacity for temporal and imaginative thought. The ability to describe events, to construct narratives, and to encode experiences in symbolic form allows individuals to refine and extend their mental simulations. This co-evolution creates a feedback loop in which cognition and communication mutually reinforce one another, leading to increasingly complex forms of thought and social organisation.

This process reaches a critical acceleration during the Pleistocene, a period marked by significant changes in environment, social structure, and technological capacity. The demands of cooperative hunting, long-distance migration, and resource management require forms of coordination that extend beyond immediate perception. Individuals must share knowledge of past events, plan for future contingencies, and align their actions within a broader temporal framework. Language becomes indispensable in this context, enabling the transmission of information that cannot be directly observed. At the same time, the emergence of narrative introduces a new dimension to communication. Stories do not merely recount events; they organise experience, encode cultural knowledge, and reinforce group identity. Through narrative, mental time travel becomes collective, allowing groups to share not only practical information but also symbolic meanings. Culture itself can be understood as the accumulation of these shared temporal constructions, preserved and transmitted through language.

The development of theory of mind further deepens this capacity. The ability to infer the thoughts, intentions, and beliefs of others allows individuals to anticipate responses and adjust their communicative behaviour accordingly. This recursive understanding—knowing that others have minds that can represent one's own representations—creates the conditions for complex linguistic interaction. Language becomes a system not only for describing the world, but for navigating the mental states of others. The emergence of language, therefore, cannot be reduced to the invention of symbols or the expansion of vocabulary. It reflects a more fundamental shift in how humans relate to time, space, and each other. The brain becomes capable of constructing and sharing experiences that are detached from immediate reality, creating a shared cognitive space in which collective knowledge can accumulate. In this light, language appears as a tool not only for communication but for coordination across time. It allows individuals to align their actions with events that have already occurred or have yet to happen, extending the scope of cooperation beyond the present moment. This temporal extension transforms social interaction, enabling forms of organisation that would be impossible without the ability to communicate about the non-present.

What emerges is a conception of language as the external manifestation of a deeper cognitive capacity. Mental time travel provides the structure; language provides the medium. Together, they create a system in which humans can transcend immediacy, constructing shared realities that span past, present, and future. The origin of language, then, is not found in the first word spoken, but in the first moment the mind stepped outside the present and found a way to bring others with it.

Corballis, M. C. (2018) 'Mental Travels and the Cognitive Basis of Language', in Arbib, M. A. (ed.) How the Brain Got Language: Towards a New Road Map. Oxford: Oxford University Press.

Before Grammar: The Deep Motor Roots of Language

Philip Lieberman in 'Human Language and Our Reptilian Brain: The Subcortical Bases of Speech, Syntax, and Thought' reconstructs the evolution of language not as a sudden cognitive miracle, but as the gradual reconfiguration of ancient neural systems whose origins precede language itself. The central claim destabilises the idea that language is primarily cortical, symbolic, or uniquely human in its architecture. Instead, it locates its foundations in subcortical circuits—older, deeper, and shared with other species—revealing language as an emergent function of systems originally designed for movement, sequencing, and survival. The problem of language origins begins with absence. There are no direct traces of prehistoric speech, no preserved neural tissue, no fossilised syntax. What remains are fragments—bones, tools, comparative behaviours—from which one must infer the invisible. The comparative method becomes the only viable strategy, drawing analogies between living species and reconstructing ancestral traits through shared features. In this framework, similarities between humans and other primates are not incidental but diagnostic, pointing toward a common biological heritage from which language gradually emerged. This approach dissolves the notion of language as a radically new faculty. Instead, it appears as a derived trait built upon primitive capacities already present in earlier hominins and even non-human primates. Behaviours such as tool use, social organisation, and maternal care suggest continuity rather than rupture. The neural substrates underlying these behaviours—particularly those governing motor control and sequencing—become candidates for the evolutionary scaffolding of language. Speech does not arise from nowhere; it is layered upon systems that already organise action in time.

The limitations of fossil evidence reinforce this perspective. While skeletal remains can reveal locomotion and posture, they cannot disclose the dynamics of cognition or communication. The brain, as a soft organ, leaves only indirect traces, and gross anatomical features offer little insight into functional capacities. As a result, theories that posit highly specialised, uniquely human language modules remain speculative, lacking empirical grounding. The search for discrete “language areas” or genes risks overlooking the distributed and integrated nature of the systems involved. This critique extends to models that propose an innate, species-specific grammar encoded in the genome. While influential, such theories struggle to account for the absence of clear biological markers corresponding to complex linguistic structures. Evidence from genetic studies, such as those involving individuals with inherited language impairments, suggests that deficits often involve broader disruptions in motor control and cognitive sequencing rather than isolated grammatical failures. Language, in this view, cannot be reduced to a single gene or module; it reflects the coordinated operation of multiple systems. The evolutionary trajectory of language is therefore better understood as gradual and cumulative. Early hominins inherited a repertoire of neural and behavioural capacities that were progressively refined under selective pressures. The emergence of bipedal locomotion, for example, required precise coordination and balance, engaging neural circuits responsible for sequencing and motor planning. These same circuits, once

adapted for locomotion, could be repurposed for more complex behaviours, including aspects of speech.

Tool use provides further evidence of this continuity. The production of even simple stone tools demands planning, precision, and the ability to execute ordered sequences of actions. These requirements mirror those of language, where sounds must be organised into structured patterns. The lateralisation of brain function observed in tool-making activities suggests early specialisation that may have prefigured linguistic organisation. In this sense, the hand and the mouth share a common evolutionary history, both governed by systems that regulate action in time. Studies of chimpanzee communication illustrate both the continuity and the limits of these capacities. Chimpanzees can acquire a modest vocabulary of signs or symbols and exhibit basic combinatorial abilities, yet they do not achieve the fluency or generativity characteristic of human language. Their vocalisations remain closely tied to emotional states, lacking the voluntary control required for speech. These constraints highlight the importance of anatomical and neural developments specific to humans, while also demonstrating that key components of language—lexical reference and simple sequencing—have deeper evolutionary roots. One of the most significant anatomical adaptations in this context is the human supralaryngeal vocal tract. Its configuration, with a descended larynx and a reshaped oral cavity, allows for the production of a wide range of distinct speech sounds. This arrangement enables the articulation of stable vowel contrasts that form the basis of spoken language. Yet this adaptation comes at a cost, increasing the risk of choking and suggesting that its evolution was driven by strong selective pressures for effective communication. The vocal tract becomes not merely a biological structure, but a compromise shaped by the demands of speech.

Beneath these anatomical changes lies a more fundamental transformation in neural organisation. Subcortical structures, particularly the basal ganglia, play a central role in sequencing both motor actions and speech. These systems regulate the timing and coordination of complex behaviours, linking perception, action, and cognition. Their involvement in language challenges the assumption that linguistic ability resides primarily in higher cortical regions. Instead, language emerges from the interaction between cortical and subcortical networks, with the latter providing the temporal framework necessary for fluent expression. The gradual increase in brain size throughout hominin evolution further supports this integrative model. Expansions in areas related to memory, planning, and social cognition enhance the capacity for complex behaviour, but do not introduce entirely new structures. Rather, they amplify and reorganise existing systems, allowing for greater flexibility and integration. The development of syntax, in this context, appears not as a sudden innovation but as the cumulative outcome of increasingly sophisticated sequencing abilities. Cultural and environmental pressures during the Pleistocene intensify these developments. As hominin groups expand, migrate, and engage in more complex forms of cooperation, the need for efficient communication grows. Language evolves in response to these demands, enabling the coordination of activities, the transmission of knowledge, and the maintenance of social bonds. Yet even at this stage, it remains grounded in the neural systems that govern action and perception.

What emerges from this account is a conception of language as deeply rooted in the body and its movements. Speech is not detached from action; it is a specialised form of it. Syntax is not an abstract code imposed upon thought; it is an extension of the brain's capacity to organise sequences. Thought itself becomes inseparable from these processes, shaped by the same neural mechanisms that guide behaviour. Language, therefore, is not the product of a uniquely human organ or a sudden evolutionary leap. It is the outcome of a long process of adaptation, in which

ancient systems were repurposed, refined, and integrated into new forms of expression. The so-called reptilian brain, far from being a primitive remnant, becomes a foundational component of this process, providing the temporal and organisational structures upon which language is built. In tracing language back to these deep neural roots, the distinction between human and animal communication is both clarified and complicated. Humans possess a level of flexibility, abstraction, and generativity unmatched by other species, yet the mechanisms that support these capacities are not entirely new. They are transformations of systems that once served more basic functions, now reorganised to sustain one of the most complex forms of behaviour in the natural world.

Lieberman, P. (2000) Human Language and Our Reptilian Brain: The Subcortical Bases of Speech, Syntax, and Thought. Cambridge, MA: Harvard University Press.

The Speaking Body: Language Beyond the Cortex

Philip Lieberman in 'Human Language and Our Reptilian Brain: The Subcortical Bases of Speech, Syntax, and Thought' extends the argument for a biologically grounded account of language by reframing speech not as a peripheral expression of cognition, but as the central organising force of the functional language system. Speech is not merely one modality among others; it is the default condition through which human thought, memory, and communication are structured. Even when alternative systems such as writing or sign are employed, they remain derivative, anchored in neural architectures that evolved for vocal expression. The functional language system emerges as a distributed and integrated network rather than a discrete module. It links perception, action, and abstraction into a unified process, enabling individuals not only to communicate with others but to think through internalised speech. Words operate as conceptual instruments, not as simple labels attached to objects. They activate networks that connect sensory experience, motor patterns, and stored knowledge, transforming perception into meaning. When a word is invoked, it does not merely point outward; it reactivates the embodied traces of prior encounters, binding language to the world it seeks to describe. This distributed architecture reveals the evolutionary depth of language. Structures such as the basal ganglia, originally adapted for motor control, now participate in the sequencing of speech and syntax. The same neural circuits that once coordinated movement through physical space are repurposed to organise linguistic sequences, linking the production of sound with the structuring of thought. Language, in this sense, is an extension of action, a specialised form of motor behaviour that has acquired symbolic capacity.

Comparative evidence reinforces this continuity. Non-human primates, though incapable of speech, exhibit limited lexical and combinatorial abilities, suggesting that the foundations of language are not uniquely human but shared across species. What distinguishes humans is not the presence of entirely new systems, but the degree to which existing ones have been elaborated and integrated. Speech, with its anatomical and neural specialisations, becomes the decisive threshold, transforming rudimentary communicative capacities into a fully articulated system. The evolution of speech anatomy illustrates the cost and necessity of this transformation. The descended larynx and reconfigured vocal tract enable a wide range of distinct sounds, but at the expense of increased vulnerability to choking. Such a trade-off indicates that the communicative advantages of speech were sufficiently powerful to outweigh significant biological risks. Language, therefore, is not an incidental by-product of evolution; it is a function that has reshaped the body itself. At the neural level, this reshaping is inseparable from the integration of cortical and subcortical systems. While traditional accounts emphasise regions associated with language processing, these areas alone cannot account for the fluidity and adaptability of human communication. Subcortical structures

provide the temporal and organisational framework necessary for sequencing both movement and speech. The functional language system thus reflects a convergence of multiple neural pathways, each contributing to the coordination of complex behaviour.

This perspective challenges the assumption that language operates according to fixed, innate rules encoded in specialised modules. Models that posit a universal grammar governed by algorithmic principles struggle to account for the variability and adaptability observed in linguistic behaviour. As linguistic data expands, such models often require increasing complexity, suggesting that they capture only a fragment of the underlying processes. A biologically grounded approach, by contrast, views language as emerging from dynamic interactions within distributed networks, shaped by both evolutionary history and individual experience. Neural plasticity plays a crucial role in this process. The capacity of the brain to reorganise itself in response to environmental input allows language to be acquired and refined through exposure. Children do not simply activate pre-existing grammatical structures; they learn patterns through interaction, gradually aligning their neural systems with the linguistic environment. This process relies on general learning mechanisms, including association and pattern recognition, rather than on pre-specified rules. Language acquisition thus reflects the adaptability of the brain rather than the execution of a predetermined programme. Evidence from both behavioural studies and computational simulations supports this view. Even relatively simple neural systems can acquire complex patterns when exposed to structured input, suggesting that the emergence of linguistic competence does not require a specialised genetic blueprint. Instead, it arises from the interaction between neural architecture and environmental conditions. This challenges the notion that language is encoded in discrete genes or modules, pointing instead to a more fluid and context-dependent process.

The critique of universal grammar extends beyond theoretical concerns to empirical limitations. The absence of clear genetic correlates for specific linguistic structures, combined with the variability of linguistic behaviour across individuals and cultures, undermines the claim that language is governed by a fixed set of innate principles. Disorders affecting language often involve broader cognitive and motor impairments, indicating that linguistic deficits cannot be isolated from the overall functioning of the brain. Language, therefore, must be understood as part of a larger system rather than as an autonomous faculty. This reconceptualisation has significant implications for the study of language. It suggests that linguistic theory must move beyond abstract models and engage with the biological realities of the brain. The functional language system is not a static structure but an adaptive network, shaped by evolutionary pressures and individual experience. Understanding it requires an interdisciplinary approach that integrates insights from neuroscience, evolutionary biology, and cognitive science. At the same time, this perspective highlights the role of environment in shaping linguistic capacity. If language emerges from interaction between neural systems and external conditions, then access to rich and supportive environments becomes crucial for its development. The acquisition of speech, syntax, and meaning depends not only on biological predispositions but on the quality of social and educational contexts in which individuals are embedded.

Language, in this light, appears as a biological achievement grounded in the body and extended through culture. It is not an abstract code imposed upon the mind, but a living system that connects perception, action, and thought. The functional language system embodies this integration, revealing how ancient neural circuits have been transformed to support one of the most distinctive features of human existence. What ultimately emerges is a vision of language that resists simplification. It is neither purely innate nor purely learned, neither entirely symbolic nor entirely

embodied. It is the product of an evolutionary process that has woven together multiple strands—motor control, sensory perception, emotional regulation, and cognitive abstraction—into a single, dynamic system. In this system, speech is not merely the expression of thought; it is one of the conditions through which thought itself becomes possible.

Lieberman, P. (2000) Human Language and Our Reptilian Brain: The Subcortical Bases of Speech, Syntax, and Thought. Cambridge, MA: Harvard University Press.

From Signals to Trust: The Social Contract of Language

James R. Hurford in ‘The Origins of Language: A Slim Guide’ reframes the emergence of language not as a purely cognitive breakthrough, but as a transformation in the nature of social interaction, where communication becomes intentional, ritualised, and ultimately anchored in trust. Language does not begin with words, but with the recognition that behaviour can stand in for action, allowing individuals to influence one another without resorting to force. What evolves is not merely a system of signals, but a shared understanding that signals are meant to be interpreted. At its most basic level, communication is defined as behaviour that affects others in ways that presuppose intention. This excludes many biological interactions that may appear communicative but lack this mutual recognition. The distinction is subtle but decisive: communication emerges only when both sender and receiver participate in a shared framework of meaning. A gesture becomes communicative not because it causes a reaction, but because it is understood as an attempt to do so. This mutual orientation marks the transition from mere behaviour to meaningful exchange. Within this framework, early communication evolves through ritualisation. Actions that once had direct physical consequences are gradually transformed into signals that anticipate those consequences without enacting them. The baring of teeth, for instance, replaces the need for attack, allowing aggression to be expressed without violence. This transformation benefits both parties, conserving energy and reducing risk, while establishing stable patterns of interaction. Communication, in this sense, is an economy of substitution, where signals replace actions and meaning replaces force.

A further distinction emerges between dyadic and triadic forms of communication. Dyadic interaction involves direct engagement between individuals, such as greeting or courtship displays, where the focus remains on the relationship itself. Triadic communication, by contrast, introduces a third element—an external object, event, or context—around which interaction is organised. This shift represents a crucial step toward language, as it enables reference beyond the immediate participants. Alarm calls in primates, which signal the presence of predators, illustrate an early form of this capacity, pointing toward a world that exists independently of the interaction. Human language expands this triadic structure to an unprecedented degree. It allows individuals to direct attention not only to present objects but to absent, abstract, and imagined entities. This capacity is not innate in its full form but develops through processes of learning and social interaction. Ontogenetic ritualisation plays a central role here, as repeated interactions between individuals give rise to shared conventions. What begins as a physical act becomes a symbolic gesture, understood within a specific relational context. Over time, these gestures stabilise into communicative norms that can be extended across larger groups. The emergence of such conventions depends on a capacity for intention and inference that exceeds that of other animals. Humans do not merely respond to signals; they interpret them in light of presumed intentions. A simple act, such as a cough, can be recontextualised as a deliberate signal, its meaning determined not by its physical properties but by the intentions attributed to it. This interpretive flexibility

allows communication to operate on multiple levels simultaneously, combining explicit content with implied meaning.

The ability to navigate these layers of meaning is closely tied to the capacity for mind-reading, or the inference of others' mental states. While nonhuman primates exhibit limited forms of this ability, particularly in competitive contexts, they do not engage in the cooperative sharing of attention and intention that characterises human interaction. Human communication relies on a recursive awareness of others' perspectives, enabling individuals to anticipate responses, adjust their behaviour, and construct messages that go beyond literal expression. This complexity is further enhanced by the use of implicature, where meaning is conveyed indirectly through context and inference. An utterance does not merely state a fact; it invites interpretation, allowing speakers to communicate intentions, attitudes, and expectations without explicit articulation. This capacity transforms language into a flexible and adaptive system, capable of conveying far more than its surface structure suggests. The social dimension of language is inseparable from the dynamics of cooperation and competition. Human communication operates within a framework where individuals must balance self-interest with the need for group cohesion. Language facilitates this balance by enabling the negotiation of relationships, the establishment of norms, and the maintenance of trust. Unlike many forms of animal communication, which are largely instinctive, human language is learned, costly to acquire, and deeply embedded in social structures.

Trust emerges as a central condition for the functioning of this system. Because speech is easy to produce but difficult to verify, its reliability depends on the willingness of individuals to adhere to shared norms of honesty and reciprocity. Language thus becomes both a tool for cooperation and a mechanism for enforcing it, as those who violate communicative norms risk exclusion or punishment. In this way, linguistic competence is intertwined with social identity, marking membership within a group and distinguishing insiders from outsiders. The evolution of altruism further reinforces this dynamic. While many species exhibit forms of cooperation based on kinship, humans extend cooperative behaviour to unrelated individuals through systems of reciprocal exchange. This extension requires advanced cognitive capacities, including memory, recognition, and the ability to detect and respond to deception. Language supports these processes by enabling individuals to coordinate actions, share information, and establish reputations within a group. Human cooperation, in its scale and flexibility, surpasses that of other species. It allows for the formation of large, complex societies organised around shared goals and symbolic systems. Language is the medium through which these systems are constructed and maintained, providing the means to articulate collective identities and coordinate collective action. It transforms isolated interactions into enduring structures, binding individuals together in networks of meaning and obligation.

What emerges from this account is a conception of language as a social contract, grounded in mutual recognition, sustained by trust, and shaped by the interplay of cooperation and competition. It is not simply a system for transmitting information, but a framework for organising relationships and constructing shared realities. The origins of language, therefore, lie not only in the evolution of cognitive capacities, but in the development of social systems that require and sustain complex forms of communication. Language becomes possible when signals are no longer mere reactions, but intentional acts embedded within a shared understanding. It flourishes when individuals can rely on one another to interpret, respond, and cooperate within this framework. And it endures because it binds individuals into communities where meaning is not given, but continually negotiated.

Hurford, J. R. (2014) The Origins of Language: A Slim Guide. Oxford: Oxford University Press.

From Naming to Knowing: The Birth of Shared Words

James R. Hurford in 'The Origins of Language: A Slim Guide' traces the emergence of vocabulary as the decisive moment when private mental representations became public, transforming isolated cognition into collective meaning. Language does not begin with grammar, structure, or rules, but with the simple yet profound act of naming. In this act, inner experience is externalised, stabilised, and made available to others, creating the first bridge between minds. Non-human animals possess what may cautiously be called proto-concepts—internal representations shaped by perception and experience. These, however, remain largely confined to the individual. Even when expressed through calls or signals, they lack the flexibility and intentional sharing that characterise human communication. Their signals are often fixed, innate, and tied to immediate contexts, offering little evidence of a system capable of deliberate expansion. The difference, therefore, is not the presence of representation, but its transformation into a shared code. For such a transformation to occur, a prior social infrastructure is required. Cooperation, trust, and reciprocal expectations provide the conditions under which communication can extend beyond instinct. Without these, the externalisation of thought would collapse into noise or deception. Vocabulary emerges only when individuals can rely on one another to interpret and retain shared associations between sounds, gestures, and meanings. Words are thus not isolated inventions but products of a social contract that stabilises their use.

The earliest stage of this development appears in what may be termed the one-word phase, or protolanguage. In this stage, individual utterances function as complete units of meaning, unbound by grammatical relations. Evidence from both trained apes and human children suggests that the acquisition of vocabulary precedes the mastery of syntax. Words exist first as standalone signals, each carrying a specific association, before being integrated into combinatorial systems. This indicates that language begins not as a structured system, but as a collection of meaningful fragments. The nature of these first words remains a subject of debate, yet evidence points toward an atomistic origin. Early words likely referred to discrete objects or events rather than entire situations. Observations of child language acquisition reveal a tendency to map words onto whole objects, a pattern known as the whole object assumption. This suggests that the earliest vocabulary was grounded in perceptual salience, privileging stable and identifiable entities over complex relational structures. Language, at this stage, mirrors the structure of perception, organising experience into distinct units that can be named and recalled. Within this emerging system, different types of words begin to appear. Deictic expressions, tied to immediate context, allow individuals to direct attention to objects and events in the present environment. Alongside these, more general terms develop, referring to categories that extend beyond specific instances. This dual structure enables communication to operate across both immediate and extended contexts, linking the present moment with accumulated knowledge. It is here that language begins to transcend immediacy, connecting perception with memory.

The question of medium—whether early words were spoken or gestured—remains open, yet the evidence suggests a significant role for gesture in the initial stages. Gestural communication offers a degree of iconicity, allowing meaning to be conveyed through visual resemblance. This makes it particularly suited for the early phases of language, where associations between form and meaning are still being established. Over time, however, speech emerges as the dominant medium, not because it is more iconic, but because it is more flexible. It frees the hands, operates in darkness, and allows communication at a distance, making it better adapted to the demands of expanding social interaction. The transition to speech requires the organisation of vocalisations

into stable patterns. Early sounds, likely derived from rhythmic movements associated with feeding or breathing, evolve into structured syllables. The consonant-vowel pattern, simple yet versatile, becomes the foundation of spoken language. From this base, communities begin to select and stabilise specific sounds, shaping phonetic systems that maximise clarity while minimising confusion. Language, in this phase, becomes a system of distinctions, where meaning depends on the ability to differentiate one sound from another. As vocabulary expands, the relationship between form and meaning becomes increasingly arbitrary. While early words may have been motivated by resemblance or association, these connections gradually weaken as words are shaped by repeated use. Sound patterns are simplified, regularised, and detached from their original referents, becoming conventional signs within a community. This arbitrariness, far from being a limitation, enhances the flexibility of language, allowing it to accommodate an ever-growing range of meanings.

The establishment of shared vocabulary depends on repetition, memory, and social reinforcement. Experimental and historical evidence demonstrates how rapidly such systems can emerge when individuals are placed in communicative contexts. The development of new sign languages, for instance, shows how groups can spontaneously generate structured vocabularies, moving from iconic gestures to more abstract and conventional forms. This process illustrates the dynamic nature of language, continually evolving through use. The introduction of words reshapes cognition itself. By providing stable labels for categories and experiences, language refines and standardises mental representations. Objects and events are no longer encountered solely through perception but are mediated by linguistic categories that influence how they are recognised and remembered. Even at early stages of development, the presence of distinct labels alters expectations and attention, demonstrating the power of words to structure thought. Yet this influence is not uniform. Some aspects of cognition, such as basic emotional responses, remain largely independent of language, while others are deeply shaped by it. Differences in vocabulary across languages reveal how cultural contexts influence the categorisation of experience, creating variations in how the world is perceived and understood. Language thus becomes both a reflection of shared reality and a force that shapes it.

The coining of words marks a threshold in human evolution, where thought becomes communicable and communication becomes cumulative. What begins as a set of isolated signals evolves into a system capable of sustaining collective knowledge, enabling individuals to build upon the experiences of others. Language, in this sense, is not merely a tool for expression but a mechanism for cultural transmission, allowing knowledge to persist beyond the individual. In this transformation, the private becomes public, the immediate becomes enduring, and the individual becomes part of a shared symbolic order. Words do not simply name the world; they reorganise it, creating a space where meaning is no longer confined to the mind but distributed across a community. The origin of vocabulary is therefore not only the beginning of language, but the beginning of a new form of human existence, in which reality itself is shaped through shared signs.

Hurford, J. R. (2014) The Origins of Language: A Slim Guide. Oxford: Oxford University Press.

The Mind Beyond the Skull: Language as Cognitive Mutation

Robert K. Logan in 'The Extended Mind Model: The Origins of Language and Culture' advances a radical proposition in which language does not merely emerge from the mind but actively constitutes it, transforming the brain from a perceptual processor into a conceptual system capable of abstraction, culture, and symbolic thought. Language appears here not as a gradual extension of

animal communication, but as a bifurcation—a sudden reorganisation of cognition analogous to the phase transitions described in chaos theory. The origins of this transformation are not located in speech alone, but in a broader history of linguistic evolution that includes writing, mathematics, science, and digital computation. Each of these systems emerges in response to the limitations of the previous one, forming a sequence of cognitive expansions. The phonetic alphabet, for instance, reorganises thought by enabling analysis, classification, and abstraction, while later symbolic systems further extend this capacity. Language, in this expanded sense, is not a single invention but a chain of innovations, each pushing cognition toward greater complexity. This development is rooted in the increasing demands of hominid life. The combined pressures of tool-making, fire control, coordinated hunting, and complex social organisation generate a level of informational density that exceeds the capacity of purely perceptual cognition. Sensory experience alone can no longer organise the world effectively. At this threshold, language emerges as a new cognitive strategy, capable of compressing and stabilising experience into manageable units.

The first words function not as simple labels but as organising centres of meaning. Logan describes them as ‘strange attractors’, borrowing a concept from non-linear dynamics. A word such as ‘water’ gathers together multiple sensory experiences—visual, tactile, contextual—into a single conceptual node. This node does not eliminate variation but structures it, allowing different instances to be recognised as belonging to the same category. Meaning, therefore, is not fixed but dynamic, shifting with context, usage, and social interaction. Language is inherently communal because these attractors are shared. A word acquires stability not through individual cognition but through repeated use within a group. At the same time, its meaning remains fluid, adapting to new contexts and interpretations. Even highly formal systems such as mathematics, which strive for precision, cannot entirely escape this variability. Their concepts approach fixed points, yet remain embedded in interpretative frameworks that prevent complete closure. Before the emergence of fully articulated speech, several proto-linguistic systems prepare the ground for language. Tool-making establishes a form of procedural logic, where actions must be ordered and materials selected according to implicit rules. Social organisation introduces patterns of interaction that depend on timing, sequencing, and mutual expectation. Mimetic communication—gestures, expressions, and vocal tones—provides a means of representing and transmitting meaning without words. Each of these systems contains elements of semantics and syntax, forming a pre-linguistic infrastructure upon which speech can develop.

These proto-languages share a crucial feature: generativity. They allow for the production of new combinations and responses, rather than fixed, repetitive patterns. This capacity becomes central to language, where finite elements can generate infinite expressions. The emergence of syntax builds upon this foundation, transforming isolated signals into structured sequences capable of conveying complex relations. The transition from percept-based to concept-based thought marks a decisive rupture. Percepts are tied to immediate experience, while concepts abstract from it, allowing the mind to operate independently of the present moment. This shift enables planning, imagination, and symbolic representation, redefining the scope of cognition. It also transforms social life, as communication moves from the coordination of immediate actions to the sharing of narratives, intentions, and knowledge. Within this framework, language assumes a new function as a tool that extends the brain. Drawing on the insight that media operate as extensions of human faculties, language can be understood as an external system that amplifies cognitive capacity. The equation ‘mind = brain + language’ captures this relationship, suggesting that the mind is not confined to neural processes but distributed across symbolic systems. Language acts as cognitive software, enabling the brain to perform operations that would otherwise be impossible. This extension does not require a corresponding increase in biological complexity. Instead, it allows

the existing brain to operate more efficiently, bypassing physical constraints such as size and energy consumption. The emergence of syntactic language represents the point at which this extension becomes fully operational, marking the transition to modern human cognition. Archaeological evidence, including symbolic artefacts and early art, supports the view that this shift occurred relatively recently in evolutionary terms.

The development of language can thus be understood through a series of bifurcations. The first is the movement from percepts to concepts, where sensory experience is reorganised into abstract categories. The second is the transformation of the brain into the mind, as language extends cognitive processes beyond their biological limits. The third is the emergence of modern humans, defined not only by anatomy but by the capacity for symbolic thought and cultural production. These transitions are not merely biological or cognitive events but cultural ones. Language enables the accumulation and transmission of knowledge, allowing each generation to build upon the achievements of the previous one. Culture becomes possible because meaning can be stabilised and shared, creating a collective memory that transcends individual experience. The implications of this model extend beyond the origins of language to its ongoing role in human life. If the mind is constituted through language, then changes in linguistic systems will inevitably reshape cognition. The evolution of writing, digital media, and networked communication represents further extensions of the mind, each introducing new forms of abstraction and new modes of thought.

Language, in this sense, is both the condition and the limit of human understanding. It enables the formation of concepts, yet also constrains them within particular symbolic frameworks. The flexibility of language allows for continuous adaptation, but its dependence on shared conventions ensures that meaning is never entirely stable. The emergence of language therefore marks not only the beginning of communication but the beginning of a new mode of existence. Humans become creatures of concepts, inhabiting a world structured by symbols rather than immediate perception. Reality is no longer encountered directly but mediated through linguistic categories that organise and interpret experience. In this transformation, the boundary between mind and world becomes porous. Language extends cognition into the environment, embedding thought in systems of signs that exist outside the individual. The mind is no longer located solely within the skull but distributed across a network of symbols, practices, and interactions. The extended mind model thus redefines the origin of language as the origin of the human condition itself. Language does not simply describe the world; it creates the framework within which the world can be understood. It is both a product of evolution and a force that reshapes it, driving the development of culture, knowledge, and identity.

Logan, R. K. (2007) The Extended Mind Model: The Origins of Language and Culture. Toronto: University of Toronto.

The Plastic Mind: Culture as the Architect of Thought

Jesse J. Prinz in 'Beyond Human Nature: How Culture and Experience Shape the Human Mind' reframes the long-standing nature–nurture debate by arguing that human cognition is not primarily a fixed biological inheritance but a flexible system continuously shaped by cultural forces and lived experience. The diversity of human behaviour, perception, and belief is not an anomaly to be explained away, but the central fact from which any theory of the mind must begin. A simple observation of everyday life already reveals this principle. In any shared social space, individuals display striking differences in dress, taste, opinion, and identity. These variations are not

superficial but extend deeply into preferences, values, and even patterns of thought. When expanded across cultures, this diversity multiplies, producing radically different ways of interpreting the world. Human beings do not merely inhabit different environments; they inhabit different conceptual realities shaped by the symbolic systems they inherit. This variability challenges the assumption that human nature is fundamentally uniform. Instead, it suggests that individual behaviour is the outcome of a complex interplay between environmental conditions, social norms, and historical contingencies. Cultural context becomes predictive, not incidental, allowing one to anticipate patterns of belief or behaviour based on upbringing and social structure. What appears as personal preference is often the sediment of collective experience.

Despite this, much of cognitive science has historically minimised the role of culture. Early formulations of the discipline privileged universality, treating the mind as a biologically determined system whose essential features are shared across humanity. Anthropology, though nominally included, remained peripheral, while psychology relied heavily on narrow samples and linguistics dismissed the influence of language on thought. This produced an image of the mind as stable, internally determined, and largely independent of cultural variation. Such an approach gives rise to what may be termed *naturism*, a perspective that emphasises biological determinism. Within this framework, behaviour is explained through genetic inheritance, evolutionary adaptation, or neural mechanisms. Courtship becomes a strategy encoded by natural selection, political orientation a reflection of inherited predispositions, and psychological differences the result of biochemical variation. While these explanations offer a degree of explanatory power, they often ignore the extent to which behaviour differs across cultural contexts. In contrast, *nurturism* proposes that culture and experience play a decisive role in shaping the mind. Evidence from cultural psychology demonstrates that perception itself is not uniform. Individuals raised in different environments attend to different aspects of reality, interpret social interactions differently, and develop distinct cognitive styles. What counts as normal, rational, or even real is mediated by cultural frameworks that structure interpretation.

These differences extend beyond perception to include emotion, intelligence, and personality. The vocabulary available within a language influences how distinctions are made, shaping not only communication but cognition. Educational systems can alter cognitive performance, reducing disparities that might otherwise be attributed to innate ability. Even individuals with identical genetic material diverge significantly over time, their identities moulded by experience rather than predetermined by biology. The strength of *nurturism* lies not in denying biology, but in reinterpreting it. Human beings possess biological capacities, yet these capacities are open-ended, designed for adaptation rather than constraint. The defining feature of humanity is not a fixed set of traits, but the ability to absorb, transform, and generate cultural forms. Biology provides the conditions of possibility; culture determines the direction of development. *Naturism*, by contrast, risks reducing this complexity to a set of fixed mechanisms. Its emphasis on genetic and evolutionary explanations can lead to the marginalisation of difference, framing variation as deviation from a norm. Historically, such perspectives have been used to justify exclusion and hierarchy, presenting certain behaviours or identities as natural while dismissing others as aberrant. The issue is not that biological explanations are inherently problematic, but that they are often incomplete, neglecting the formative power of cultural context. A more adequate account recognises the interaction between nature and nurture without collapsing one into the other. Even the simplest organisms exhibit this interplay, where innate tendencies are modified by experience. In humans, this interaction becomes vastly more complex. Certain capacities, such as colour perception, depend on biological structures, yet can be refined through training. Others, such as

participation in cultural practices, rely almost entirely on social learning, despite drawing on general biological abilities.

The debate becomes particularly significant when applied to language and cognition. If language is treated as an innate faculty, it resembles a preconfigured system awaiting activation. If, however, it is understood as a cultural construct, it becomes an emergent property of social interaction, shaped by usage and transmission. The latter view emphasises the role of environment in structuring not only communication but thought itself. Historically, the nature–nurture debate has taken several forms. Philosophers have questioned whether knowledge is inborn or acquired through experience, scientists have debated the origins of individual differences, and evolutionary theorists have explored the adaptive functions of behaviour. These lines of inquiry converge on a single question: to what extent are human beings defined by their biology, and to what extent by their environment? Attempts to reconcile these perspectives often produce a superficial balance that obscures the depth of the issue. Explaining complex achievements solely through genetic inheritance fails to account for the cultural conditions that make them possible. Creative expression, intellectual innovation, and social behaviour cannot be reduced to biological predispositions without losing their specificity. Culture does not merely modify innate tendencies; it constitutes the framework within which they are expressed. The emphasis on nurture offers a more expansive understanding of human potential. By focusing on adaptation, learning, and cultural variation, it reveals the extent to which human beings are capable of transformation. This perspective does not deny constraints, but it situates them within a broader context of possibility. The human mind is not a fixed entity but a dynamic system, continuously reshaped by interaction with its environment.

In this light, the question of human nature becomes less about identifying universal traits and more about understanding processes of change. The diversity observed across individuals and cultures is not a deviation from a norm but the expression of a fundamental capacity for variation. Humanity is defined not by what it is, but by what it can become. The movement beyond human nature, therefore, is not a rejection of biology but a recognition that the most significant aspects of human life emerge from the interplay between organism and environment. Culture extends the mind, providing the structures through which experience is interpreted and organised. It is within this extended framework that thought, identity, and meaning take shape. The story of humanity is thus not one of static inheritance but of continuous creation. Each individual participates in a network of influences that shape perception, belief, and action. Language, norms, and practices accumulate, forming a collective system that transcends the individual while remaining dependent on it. In this system, the mind is both shaped and shaping, both determined and determining. To move beyond human nature is to recognise that the boundaries of the mind are not fixed. They expand with experience, adapt to context, and evolve through interaction. This openness is the defining characteristic of human cognition, making culture not an accessory to biology but its most significant expression.

Prinz, J. J. (2012) Beyond Human Nature: How Culture and Experience Shape the Human Mind. London: Penguin Books.

The Grammar Illusion: Learning Without Blueprints

Jesse J. Prinz in ‘Beyond Human Nature: How Culture and Experience Shape the Human Mind’ reinterprets the origins of language by confronting one of the most influential ideas of modern linguistics—the claim that grammar is an innate structure embedded in the human mind—and

replacing it with a more dynamic account grounded in learning, interaction, and statistical regularities. Language, in this view, is not pre-installed but progressively constructed, emerging from the mind's capacity to detect patterns within a structured social environment. The dominance of the innateness hypothesis begins with the intervention of Noam Chomsky, who argued that children acquire language too rapidly and accurately for it to be explained by experience alone. According to this perspective, the human brain contains a specialised language faculty equipped with Universal Grammar, a system of abstract rules that guides acquisition. Experience merely activates and adjusts this system, determining the specific form a language takes. Grammar, therefore, is not learned in the conventional sense; it is revealed through exposure. This model derives its power from a paradox. Children master complex grammatical systems within a few years, often without explicit instruction and despite frequent exposure to imperfect input. They produce sentences they have never heard before, suggesting an internal system capable of generating novel combinations. Errors such as 'eated' instead of 'ate' reveal that children are not simply imitating but actively generalising rules, applying patterns beyond their appropriate domains. These observations appear to support the idea that language learning involves an internal rule system.

Yet the paradox dissolves when examined more closely. The assumption that children consciously infer rules analogous to those used by linguists proves untenable. The complexity of grammatical systems far exceeds what can be explicitly articulated, even by experts. The acquisition process does not resemble hypothesis testing in any formal sense, but unfolds implicitly, without awareness of the underlying structures being learned. What appears as rule-based behaviour may instead be the product of accumulated statistical sensitivity to patterns in speech. The statistical learning model offers an alternative that dispenses with the need for an innate grammar. On this account, children are equipped with general cognitive capacities that allow them to detect regularities in their environment. Language input, far from being impoverished, contains abundant cues regarding structure and usage. Words tend to appear in predictable positions, co-occur with certain other words, and function within recurring patterns of interaction. Through exposure, children internalise these regularities, forming expectations that guide production and comprehension. This process is not unique to language but reflects a broader learning strategy observed across domains and species. The brain continuously tracks frequencies, sequences, and correlations, extracting patterns without explicit instruction. Language acquisition becomes a specialised application of this general capacity, shaped by the richness of linguistic input and the social contexts in which it is embedded.

One of the strongest arguments for innateness—the so-called poverty of the stimulus—rests on the claim that children acquire structures for which they receive little or no direct evidence. However, empirical studies challenge this assumption by demonstrating that linguistic environments are more structured than previously believed. Child-directed speech often contains simplified, repetitive patterns that highlight grammatical relations. Moreover, complex constructions can be inferred indirectly from simpler ones, allowing learners to extend their knowledge beyond the immediate input. Experimental work supports this view by showing that statistical models can replicate aspects of language acquisition traditionally attributed to innate knowledge. These models predict grammatical preferences by analysing distributions of forms within input, even when certain structures are absent. The apparent gap between input and competence narrows when learning is understood as probabilistic rather than rule-based. Cases of spontaneous language creation further illuminate this process. When individuals are exposed to limited or inconsistent input, they do not simply reproduce it but reorganise it into more stable systems. The development of creole languages from pidgins, for example, demonstrates how successive generations introduce

structure and regularity. Similarly, newly formed sign languages arise through social interaction, gradually acquiring complexity as they are used and transmitted within a community.

These phenomena do not require the assumption of an innate grammatical blueprint. Instead, they reveal the capacity of human cognition to impose order on variability, transforming fragmented input into coherent systems through iterative use. Structure emerges not from pre-existing rules but from the dynamics of communication itself. The notion of a critical period for language acquisition is often invoked to support biological determinism, yet it can be reinterpreted in cognitive terms. The decline in language learning ability with age may reflect general changes in memory, attention, and learning flexibility rather than the closure of a specialised language module. Early development is characterised by heightened plasticity, allowing rapid adaptation to environmental input, while later stages involve consolidation and reduced openness to new patterns. Comparative studies with non-human primates reinforce this interpretation. While apes can acquire basic symbolic systems, their limitations correspond to constraints in memory and processing capacity rather than the absence of a specific grammatical faculty. Human language emerges from quantitative differences in cognitive resources that enable the handling of longer sequences and more complex dependencies. The broader implication of this perspective is that language is not a fixed biological endowment but an emergent property of interaction between cognitive capacities and cultural environments. It evolves through use, shaped by the need to communicate effectively within a social group. Grammar is not imposed from within but arises from patterns of usage that become stabilised over time.

This shift from nativism to empiricism reconfigures the understanding of human cognition. Instead of a collection of specialised modules, the mind appears as a flexible system capable of adapting to diverse inputs. Language becomes one manifestation of this adaptability, reflecting the interplay between general learning mechanisms and the structured nature of linguistic environments. The debate between these perspectives remains unresolved, yet the statistical model offers a more parsimonious account, grounded in observable processes rather than hypothetical structures. By attributing language acquisition to general cognitive capacities, it aligns linguistic theory with broader principles of learning and development. In this framework, the origin of language lies not in a pre-existing grammar but in the capacity to detect, internalise, and reproduce patterns. The apparent complexity of language emerges gradually from simple processes, amplified by social interaction and cultural transmission. What appears as an innate system may instead be the cumulative effect of repeated exposure and adaptation. Language, therefore, is less a gift embedded in the mind than a skill cultivated through engagement with the world. Its rules are not discovered within but constructed through use, reflecting the environments in which they arise. In this sense, grammar is not the starting point of language but its outcome—a stabilised pattern emerging from the continuous negotiation between mind, society, and experience.

Prinz, J. J. (2012) Beyond Human Nature: How Culture and Experience Shape the Human Mind. London: Penguin Books.

The Emotional Code: How Societies Program Right and Wrong

Jesse J. Prinz in ‘Beyond Human Nature: How Culture and Experience Shape the Human Mind’ confronts the origin of moral values by dismantling the intuition that morality is a fixed, innate compass, and replacing it with a far more unsettling and revealing account: moral judgment is not discovered but cultivated, not embedded in nature but programmed through culture by means of emotion. What appears as an immediate certainty—what feels unquestionably right or wrong—is

in fact the sediment of social conditioning, internalised so deeply that it masquerades as instinct. The visceral rejection of practices such as cannibalism illustrates this illusion of natural morality. The reaction is immediate, affective, and seemingly universal. Yet historical and anthropological evidence reveals that such practices have existed across cultures under specific conditions, often embedded in ritual, survival strategies, or systems of belief. The same act that provokes horror in one society may carry sacred or practical meaning in another. This variability exposes the instability of moral intuitions and suggests that their source lies not in biology alone but in culturally mediated emotional responses. Moral judgment, when examined closely, reveals its dependence on feeling rather than detached reasoning. Faced with ethical questions, individuals rarely engage in extended deliberation; instead, they respond with rapid affective evaluations. This aligns with the philosophical position associated with David Hume, who argued that morality is grounded in sentiment. Modern empirical research reinforces this view, demonstrating that emotional centres of the brain are consistently activated during moral decision-making. Reason, rather than generating moral judgments, often serves to justify them after the fact.

The structure of these judgments becomes particularly evident in controlled moral dilemmas. When individuals are asked to choose between sacrificing one life to save five, their responses vary dramatically depending on the mode of action. Redirecting harm through an impersonal mechanism is often deemed acceptable, while direct physical intervention is rejected, even when the outcome is identical. This divergence cannot be explained by rational calculation, but corresponds closely to differences in emotional intensity. Direct harm evokes stronger feelings of aversion, which in turn shape the moral verdict. Emotions do not merely accompany moral judgments; they constitute them. Experimental manipulations of emotional states—through environmental conditions, induced moods, or contextual cues—demonstrate that moral evaluations can shift significantly without any change in the underlying facts. Disgust, anger, and amusement each recalibrate moral perception, revealing the extent to which ethical reasoning is anchored in affective experience. Morality, in this sense, operates less like a system of principles and more like a calibrated emotional response. The necessity of emotion becomes even clearer when it is absent. Individuals with impaired emotional capacities, such as psychopaths, are capable of understanding social rules but fail to experience them as morally binding. Harm, for them, lacks the emotional resonance that transforms a rule into an obligation. This dissociation suggests that cognition alone is insufficient for moral judgment; without emotion, the distinction between right and wrong collapses into mere convention.

Different categories of moral violation correspond to distinct emotional profiles. Acts perceived as violations of bodily or natural order tend to elicit disgust, reflecting concerns with purity and contamination. Violations of personal rights provoke anger, signalling breaches of fairness or harm. Transgressions against social norms generate contempt, directed at those who disrupt communal expectations. These emotional patterns provide the structure within which moral categories are formed and maintained. The acquisition of these patterns is a developmental process. Children are not born with a fully formed moral system but acquire it through interaction, correction, and reinforcement. Caregivers respond to behaviour with approval or disapproval, gradually linking actions to emotional consequences. Over time, these external responses are internalised, forming the basis of moral intuition. What begins as imposed discipline becomes self-regulation, guided by feelings such as guilt and shame. This process explains the remarkable diversity of moral systems. Practices that appear self-evidently wrong in one context may be acceptable or even obligatory in another, depending on the emotional associations cultivated within a culture. Economic conditions, social structures, and historical contingencies all contribute to shaping these associations. Cannibalism, for instance, may arise in contexts of scarcity or ritual

significance and disappear when alternative systems render it unnecessary. Moral values track the needs and constraints of societies rather than reflecting universal truths.

Historical transformations further illustrate this adaptability. Institutions such as slavery, once widely accepted, have been reconfigured or abolished in response to changing economic and ideological conditions. Practices like public torture, once central to systems of punishment, have declined alongside shifts toward individual rights and humanitarian norms. Even patterns of interpersonal violence vary according to cultural context, reflecting underlying social and economic structures. The recognition of morality as culturally contingent challenges the notion of absolute ethical standards. However, it does not entail the collapse of moral meaning. Instead, it repositions morality as a dynamic system, continuously shaped and reshaped by human interaction. Ethical frameworks remain essential for organising social life, but their authority derives from shared practice rather than universal necessity. This perspective introduces a form of critical distance. If moral values are products of specific conditions, they can be examined, questioned, and revised. The apparent inevitability of moral intuition gives way to an awareness of its constructed nature. This does not weaken morality but renders it more responsive, allowing societies to adapt their ethical systems to new circumstances. The origin of moral values, therefore, lies not in an immutable human nature but in the interplay between emotion, culture, and experience. The mind does not contain a pre-written moral code; it develops one through exposure to systems of meaning that organise feeling and behaviour. What is judged to be right or wrong reflects the history of these systems, embedded within the individual as emotional dispositions.

In this light, morality becomes a form of cultural memory, carried not in explicit rules but in patterns of response. It is learned, internalised, and reproduced, sustaining social order while remaining open to transformation. The question is no longer whether morality is innate or acquired, but how it is shaped, transmitted, and altered over time. To understand moral judgment is thus to understand the processes by which societies encode values into emotion. What feels natural is revealed as historical, what appears universal as contingent. The moral sense is not a window onto objective truth, but a mirror reflecting the structures within which it was formed.

Prinz, J. J. (2012) Beyond Human Nature: How Culture and Experience Shape the Human Mind. London: Penguin Books.

Desire Engineered: The Cultural Construction of Intimacy

Jesse J. Prinz in 'Beyond Human Nature: How Culture and Experience Shape the Human Mind' interrogates one of the most seemingly biological aspects of human existence—sexuality—and reveals it to be profoundly structured by cultural forces, where instinct and invention intertwine to produce forms of desire that are as historical as they are natural. What appears to be the most primal domain of life emerges, upon closer inspection, as one of the most malleable. Sexual behaviour begins with a biological imperative: reproduction ensures the continuation of the species. Yet this imperative alone cannot explain the extraordinary variability in how humans select partners, define attractiveness, or organise relationships. Unlike other animals, whose mating behaviours are relatively fixed, human sexuality is mediated through systems of meaning that transform instinct into practice. Desire becomes shaped, redirected, and even reinvented through cultural frameworks. The question of attraction illustrates this transformation. Certain preferences appear to align with biological indicators of health and fertility. Features such as symmetry, youthfulness, or markers of hormonal balance may signal reproductive fitness, providing a basis for attraction. However, these tendencies are neither stable nor universal. Across

cultures and historical periods, standards of beauty fluctuate dramatically, reflecting not biological necessity but shifting social values.

In some contexts, fullness signifies prosperity and desirability, while in others, thinness becomes the ideal. These shifts can occur rapidly, as external influences reshape internal preferences. Media exposure, for example, can recalibrate aesthetic standards within a single generation, demonstrating how deeply perception is embedded in cultural systems. What is perceived as natural beauty is often the outcome of repeated exposure and reinforcement rather than innate preference. Cultural practices further complicate the relationship between biology and attraction. Forms of bodily modification that seem to contradict evolutionary logic—such as extreme ornamentation, deformation, or ritualised pain—persist because they function as markers of identity, status, or group belonging. These practices reveal that attractiveness is not simply about biological fitness but about signalling participation within a social order. The body becomes a canvas upon which cultural meaning is inscribed. Sexual orientation, often framed as a purely biological trait, also reflects this interplay between nature and culture. While there may be biological predispositions, the expression and interpretation of desire vary widely across societies. Historical and anthropological records document a range of practices and identities that challenge contemporary categories. What counts as normal or deviant is not fixed but negotiated within cultural contexts.

The visibility and acceptance of different orientations further demonstrate the role of social environment. In contexts where certain forms of desire are permitted, they become more openly expressed; where they are restricted, they are suppressed or reinterpreted. This does not imply that culture creates desire *ex nihilo*, but that it shapes the conditions under which desire is recognised, articulated, and lived. Patterns of preference between sexes are often explained through evolutionary narratives, yet these too are inseparable from social structures. Preferences attributed to biological roles may instead reflect economic and political realities. In societies where resources are unevenly distributed, individuals adapt their expectations accordingly. What appears as a natural inclination may in fact be a rational response to structural conditions. When these constraints are altered, preferences shift. Studies indicate that differences in reported desires between men and women diminish when social pressures are removed. This suggests that much of what is taken as natural difference is mediated by norms that regulate behaviour and expression. Desire, in this sense, is not only felt but performed within a framework of expectation. Emotions associated with relationships, such as jealousy, are similarly shaped by cultural context. While often interpreted as biologically rooted mechanisms, their expression and intensity vary across societies. The triggers of jealousy, whether emotional or physical, are not universal but reflect underlying values and social arrangements. Emotional responses are calibrated by cultural narratives that define what constitutes betrayal, loyalty, or possession.

Power relations play a central role in structuring sexual norms. The historical dominance of men over women is frequently attributed to physical differences, yet technological and economic developments provide a more compelling explanation. In societies where subsistence depends on shared labour, gender relations tend to be more balanced. As new forms of production emerge, control over resources becomes concentrated, reshaping social hierarchies. The transition from foraging to agricultural systems, particularly those reliant on heavy labour and territorial control, contributes to the consolidation of male dominance. These changes are not inevitable outcomes of biology but contingent developments shaped by material conditions. As technological systems evolve, they create new possibilities for reconfiguring these relations, demonstrating the fluidity of social structures. Marriage, often regarded as a universal institution, exemplifies the diversity

of cultural arrangements. Its forms vary widely, encompassing monogamy, polygamy, and other configurations, each reflecting specific economic, political, and ideological contexts. The prevalence of particular systems is not determined by biological necessity but by the functions they serve within a given society. Historical transformations in marital practices reveal their dependence on broader structures. Changes in property relations, labour systems, and religious institutions all influence how relationships are organised. What is considered natural or proper at one moment may be replaced by entirely different norms at another, underscoring the adaptability of human social life.

Comparisons with other primates reinforce the absence of a single natural model for human sexuality. Across species, mating systems vary widely, from promiscuity to strict pair-bonding. Human biology does not point decisively toward any one arrangement but suggests a capacity for flexibility. This openness allows cultural systems to shape sexual behaviour in diverse ways, producing a range of practices that extend far beyond biological constraints. Sexuality, therefore, emerges as a domain where nature provides a framework but culture determines its expression. The biological drive to reproduce is transformed into a complex system of meanings, norms, and practices that define how individuals relate to one another. Desire becomes entangled with identity, status, and social order, reflecting the broader structures within which it operates. The transformation of sex into a cultural phenomenon illustrates a broader principle: human behaviour cannot be understood solely in terms of biological imperatives. Even the most fundamental aspects of life are mediated by symbolic systems that reshape their significance. What begins as instinct becomes experience, organised through the languages and practices of a community.

In this sense, sexuality offers a microcosm of human existence. It reveals how deeply culture penetrates into domains often assumed to be natural, demonstrating that the boundary between nature and nurture is not fixed but constantly negotiated. The human condition is defined not by the dominance of one over the other, but by their continuous interaction. To understand desire is therefore to understand the processes through which it is formed. It is to recognise that what feels immediate and inevitable is often the result of historical and cultural forces that operate beneath awareness. The story of sexuality is not simply the story of reproduction, but the story of how human beings transform necessity into meaning, and instinct into identity.

Prinz, J. J. (2012) Beyond Human Nature: How Culture and Experience Shape the Human Mind. London: Penguin Books.

Against Essence: Humanity Beyond Nature

Jesse J. Prinz in 'Beyond Human Nature: How Culture and Experience Shape the Human Mind' concludes his argument by dismantling the very foundation upon which the concept of 'human nature' has traditionally rested, proposing that what defines humanity is not a fixed essence but a radical openness shaped through culture, history, and experience. The question is no longer what human nature is, but whether it can meaningfully be said to exist in any stable or universal form. One way to preserve the concept is to define human nature as that which distinguishes humans from other species. This classical approach, associated with Aristotle's emphasis on rationality, assumes that there is a defining trait that separates humans categorically from the rest of the animal world. Yet modern research consistently erodes this boundary. Traits once thought uniquely human—tool use, communication, social intelligence—are now observed in other species, albeit in less complex forms. The difference between humans and animals appears increasingly as one of degree rather than kind. Within this continuum, one capacity stands out: the ability to acquire

and transmit culture with exceptional flexibility and speed. This capacity does not fix behaviour but liberates it, allowing humans to operate beyond the constraints that govern other species. If there is something distinctive about humanity, it lies not in what is fixed, but in what can be transformed. The human organism is defined less by its limitations than by its openness to variation.

A second interpretation of human nature focuses not on uniqueness but on universality. Here, the emphasis is on traits that appear across all known societies. Anthropological catalogues list recurring features such as language, art, religion, and systems of cooperation. These universals seem to point toward a shared human foundation. However, closer inspection reveals that what is universal is often only the broad category, while its specific manifestations vary dramatically. Art exists everywhere, but its forms, meanings, and functions differ profoundly. Religious practices are ubiquitous, yet their beliefs and rituals are often incompatible. Even seemingly basic elements such as clothing or the use of fire are not expressions of innate drives but solutions to environmental challenges, developed and transmitted culturally. Universals, therefore, do not necessarily indicate biological programming; they may instead reflect common problems addressed through diverse cultural strategies. A third perspective attempts to isolate what is strictly natural in human behaviour, distinguishing biological predispositions from cultural influences. This approach seeks to identify traits that arise independently of learning, grounded in the structure of the organism. Yet even here, the picture is complex. Biological tendencies rarely manifest in pure form; they are always mediated by environmental conditions and social contexts. Traits often attributed to nature, such as cognitive differences or behavioural patterns, are shaped and modified through experience.

The persistent tendency to attribute behaviour to biology reflects a deeper inclination toward simplification. Biological explanations offer clarity and apparent certainty, yet they often obscure the dynamic processes through which behaviour is formed. What appears as natural may in fact be the outcome of repeated cultural reinforcement, internalised to the point of seeming inevitable. The language of innateness can conceal the historical and social origins of human traits. At the same time, it would be misleading to deny the role of biology altogether. Cultural processes depend on biological capacities—memory, learning, perception—that make them possible. Without these, culture could not exist. Every human trait is therefore biocultural, arising from the interaction between organism and environment. The mistake lies not in recognising biological contributions, but in isolating them from the systems within which they operate. This interdependence renders the traditional opposition between nature and nurture untenable. Nature does not dictate specific behaviours; it provides the conditions under which behaviour can be shaped. Nurture does not override nature; it activates and directs its potential. The relationship is not one of opposition but of mutual constitution. Human beings are neither purely biological nor purely cultural, but products of their continuous interaction.

Reconsidering human nature in this light leads to a paradoxical conclusion. If human nature exists, it is defined precisely by the absence of fixed content. What is natural to humans is their capacity to adapt, to learn, and to transform themselves in response to changing conditions. The search for a stable essence gives way to an exploration of variability and potential. This shift has significant implications for the study of humanity. Rather than seeking universal laws that govern behaviour, inquiry must attend to the diversity of cultural forms and historical trajectories. Understanding the human mind requires situating it within the contexts that shape it, recognising that cognition, emotion, and behaviour are inseparable from the environments in which they develop. The idea of human nature has often been used to impose limits, defining what is possible or acceptable. By

presenting certain traits as natural, it legitimises existing structures and resists change. To move beyond this concept is not to abandon the study of humanity, but to free it from constraints that obscure its complexity. It allows for a more nuanced understanding of how human beings become what they are. In this perspective, humanity is not a fixed category but an ongoing process. Individuals are shaped by the cultures they inhabit, yet they also participate in reshaping those cultures. The boundaries of the human are not predetermined but negotiated through practice and interaction. What it means to be human is continually redefined.

The conclusion that emerges is both disorienting and liberating. There is no singular human nature to which all must conform, no universal blueprint that dictates behaviour. Instead, there is a capacity for endless variation, grounded in the interplay between biology and culture. This capacity is not a limitation but a source of possibility. To transcend nature, then, is not to escape biology but to recognise that biology itself enables transcendence. The human condition is characterised by this tension: rooted in the natural world yet capable of exceeding it through symbolic systems, social organisation, and cultural invention. The study of humanity becomes the study of this movement beyond given constraints. In the end, what defines humans is not what they are, but what they can become. The absence of a fixed essence is not a deficiency but a defining strength. It is this openness, this capacity for transformation, that constitutes the most profound insight into the nature of the human mind.

Prinz, J. J. (2012) Beyond Human Nature: How Culture and Experience Shape the Human Mind. London: Penguin Books.

Improvisation Before Rules: Language as a Living Game

Morten H. Christiansen and Nick Chater in ‘The Language Game: How Improvisation Created Language and Changed the World’ propose a radical inversion of the traditional understanding of language, arguing that what appears as a structured system of rules is in fact the accumulated residue of countless acts of improvisation, a dynamic process through which humans continuously create meaning in real time rather than merely applying pre-existing grammatical frameworks. Language, in this account, is not a fixed code waiting to be decoded, but a living practice, sustained by interaction and shaped by necessity. The starting point of this perspective is deceptively simple: language becomes visible only when it breaks down. In moments of linguistic absence—whether through neurological damage or the inability to communicate in a foreign environment—the fundamental role of language in structuring human life is exposed. Without it, coordination collapses, knowledge cannot be transmitted, and collective reasoning disintegrates. The thought experiment of a world without language is not merely speculative; it reveals the extent to which human civilisation depends on a shared system of meaning-making that operates almost invisibly in everyday life. Yet despite this centrality, language remains deeply puzzling. How does meaning arise from sound? Why do children acquire complex linguistic competence with such ease while scientific explanation struggles to keep pace? Why does linguistic diversity persist, and why do non-human primates fail to develop comparable systems? These questions, Christiansen and Chater argue, have been obscured by a misleading assumption: that language is an imperfect version of an ideal, rule-governed system. According to this assumption, everyday speech is seen as a degraded form of a more precise, logical language.

Their intervention reverses this hierarchy. There is no ideal language behind everyday use. Instead, what appears messy, inconsistent, or irregular is precisely what language is. Its apparent disorder is not a flaw but a feature, the product of continuous adaptation to communicative pressures.

Grammar is not an underlying blueprint but an emergent pattern, gradually stabilised through repeated interaction across generations. Language is shaped from the outside in, not from the inside out. This shift leads to a reconceptualisation of communication itself. Rather than transmitting fixed meanings, speakers engage in a process of joint improvisation. Each utterance is a negotiation, constructed in response to context, intention, and shared history. Meaning is not contained within words but arises through their use in specific situations. In this sense, language resembles a game—one that is constantly being played, modified, and reinvented. The philosophical foundation of this view can be traced to the insight that meaning depends on use. Words do not carry stable definitions; they function differently depending on the activity in which they are embedded. A single expression can perform multiple roles, its interpretation shifting with context. Communication, therefore, cannot be reduced to the mapping of words onto fixed meanings. It is an activity, a form of practice governed by implicit rules that are themselves products of interaction.

Learning a language, from this perspective, is not the internalisation of a formal system but the acquisition of skill in participating in this ongoing activity. New speakers do not memorise abstract grammatical laws; they learn to navigate situations, to anticipate responses, and to adjust their expressions accordingly. Like players entering an established game, they must infer the rules through participation, adapting to conventions that are themselves evolving. This emphasis on improvisation challenges models that locate the origins of language in innate, genetically encoded structures. While biological capacities undoubtedly constrain what is possible, they do not determine the specific forms language takes. Instead, linguistic systems emerge from the interplay between cognitive abilities and communicative needs. Over time, patterns that facilitate successful interaction become stabilised, giving the impression of an underlying structure. Yet this structure is always provisional, subject to change as new contexts and uses arise. The metaphor of charades captures this process effectively. In charades, participants rely on shared assumptions and contextual cues to convey meaning without explicit rules. Success depends on the ability to interpret signals in relation to a common understanding of the situation. Language operates similarly, though on a far more complex scale. Each communicative act draws on a vast background of shared knowledge, enabling meaning to be constructed rapidly and flexibly.

The implications of this view extend to the evolution of language. Rather than emerging fully formed, language develops gradually through the accumulation of improvisations. Each generation inherits not a fixed system but a set of conventions that must be re-enacted and modified. Over long periods, these conventions become increasingly elaborate, supporting more complex forms of communication. Yet at every stage, the process remains grounded in interaction, in the need to make oneself understood within a particular context. This evolutionary trajectory also explains the diversity of languages. If language is shaped by use, then different communities, facing different circumstances, will develop distinct systems. There is no single optimal form of language, only multiple solutions to the problem of communication. Variation is not a deviation from a norm but an inherent feature of the process. The analogy with modern digital communication underscores the continuity of this dynamic. Online environments, like early linguistic communities, are spaces of rapid innovation, where new forms of expression emerge through collective use. Memes, abbreviations, and evolving conventions demonstrate how meaning can be created and stabilised through repeated interaction without central control. The same improvisational logic that shaped language in its origins continues to operate in contemporary contexts. At a broader level, this account reframes language as a transformative force in human history. By enabling the rapid and flexible coordination of thought and action, language makes possible the development of complex social structures, cultural traditions, and technological systems. Laws, religions, sciences, and

economies all depend on the capacity to create and share meanings that extend beyond immediate experience. Language does not merely reflect these developments; it actively shapes them.

At the same time, the improvisational nature of language presents challenges for artificial systems. Machines designed to process language often rely on fixed representations and rules, struggling to capture the fluidity and context-dependence that characterise human communication. The difficulty lies not in processing words but in participating in the dynamic process through which meaning is created. To understand language, one must engage in the game, not merely analyse its components. Ultimately, the perspective offered here dissolves the boundary between structure and use. Grammar is not the foundation of language but its sediment, the trace of countless interactions that have left their mark on the system. Meaning is not stored but enacted, brought into being through the interplay of speakers and listeners. Language, then, is neither a static system nor a simple tool. It is an ongoing collective achievement, a continuous process of invention through which humans make sense of the world and of each other. What appears as order is the product of improvisation; what seems fixed is always in motion. In playing the game of language, humans have not only created a means of communication but a medium through which culture, knowledge, and society itself are endlessly reshaped.

Christiansen, M. H. and Chater, N. (2022) The Language Game: How Improvisation Created Language and Changed the World. London: Allen Lane.

Improvised Meaning: Language Before Structure

Morten H. Christiansen and Nick Chater in ‘The Language Game: How Improvisation Created Language and Changed the World’ draw on Ludwig Wittgenstein’s insight that language is part of a ‘form of life’ to argue that communication begins not with shared rules but with shared activity, where meaning is forged through improvisation long before it is stabilised into grammar. The episode of Captain Cook’s encounter with the Haush people in Tierra del Fuego becomes emblematic of this claim: two groups, separated by language, culture, and history, nevertheless succeed in communicating through gestures, objects, and situational cues. What emerges in such encounters is not the application of a code but the spontaneous construction of one. The significance of this scene lies in its ordinariness. Similar interactions have occurred throughout human history whenever groups without a common tongue meet. The success of such exchanges reveals that communication does not depend on pre-existing linguistic systems. Instead, it relies on a shared capacity to interpret actions within a context, to infer intention, and to adapt one’s behaviour accordingly. The Haush throwing down sticks as a sign of peace, and the Europeans responding in kind, is not an instance of decoding but of alignment—an emergent agreement about what counts as meaningful in that moment. From this perspective, language appears less as a fixed structure and more as a process of collaborative invention. Humans, when deprived of a common system, do not fall silent; they improvise. Gestures, facial expressions, vocalisations, and environmental cues are recruited to bridge the gap. Each successful exchange leaves behind a trace, a precedent that can be reused and refined. Over time, these traces accumulate, forming the basis of more stable conventions. What begins as improvisation gradually acquires regularity, but this regularity is always secondary, a product of repeated interaction rather than its precondition.

The emergence of pidgin and creole languages provides a larger-scale illustration of this process. In contexts where speakers of different languages must communicate—often under conditions of trade or labour—rudimentary systems arise spontaneously. These systems lack the complexity of established languages, yet they are sufficient for coordination. With time, as they are used across

generations, they develop richer vocabularies and more elaborate grammatical patterns. The trajectory from pidgin to creole mirrors, in compressed form, the broader evolution of language: improvisation gives rise to structure. The analogy with charades captures the essence of this dynamic. In charades, participants must convey meaning without relying on established linguistic forms. Success depends on creativity, shared assumptions, and the ability to infer intention from limited cues. As the game progresses, certain gestures become conventionalised, recognised more quickly and used more efficiently. The same mechanism operates in communication more generally. Repeated interactions generate patterns, and these patterns gradually stabilise into what appears to be a system. Experimental work reinforces this view. Studies in which participants are asked to communicate without a shared language show that both gestures and vocalisations can serve as effective vehicles for meaning. Repeated use leads to the emergence of increasingly efficient signs, demonstrating that structure can arise from use alone. The debate over whether gesture or vocalisation came first becomes less decisive in this light. What matters is the capacity for flexible representation, the ability to map forms onto meanings in a way that others can interpret.

This flexibility challenges theories that treat language as a pre-packaged system of symbols transmitted from speaker to listener. The so-called transmission model assumes that meaning is encoded in a signal and decoded by the recipient, as if communication were a mechanical process. Yet real interactions rarely conform to this ideal. Meaning is not fully specified by the signal; it must be constructed by the participants. The Haush and the Europeans did not exchange predefined messages; they co-created understanding through action and response. The inadequacy of the transmission model becomes even clearer when considering the role of shared knowledge. Communication depends on a vast background of assumptions, experiences, and cultural norms that remain largely implicit. Words function as prompts rather than containers of meaning, triggering inferences that draw on this shared background. The famous six-word story—‘For sale. Baby shoes. Never worn’—demonstrates how minimal linguistic material can evoke a complex narrative, relying entirely on the reader’s interpretive capacities. The visible elements of language are thus only the surface of a much deeper process. This layered structure can be understood as an iceberg, where the explicit forms of language represent only a small portion of what is involved in communication. Beneath the surface lies the network of expectations and associations that make interpretation possible. Effective communication requires navigating this hidden domain, aligning one’s expressions with the assumptions of others. The success of improvisation depends not on the precision of signals but on the ability to anticipate how they will be understood.

Seen in this way, language is inseparable from the contexts in which it is used. It is not an abstract system detached from life but a set of practices embedded within it. Each act of communication draws on prior interactions while contributing to future ones, creating a continuous process of adaptation. The stability of language is therefore an illusion, a temporary equilibrium within an ongoing flow of change. This reconceptualisation carries significant implications for how language is studied and understood. If meaning arises from use, then the search for underlying, fixed structures may be misplaced. What appears as grammar is better seen as the residue of past interactions, patterns that have proven effective and thus persist. These patterns are not imposed from above but emerge from below, shaped by the cumulative effect of countless communicative acts. At a broader level, this view highlights the creative dimension of human communication. To speak is not merely to apply rules but to engage in a process of invention, adjusting one’s expressions to fit the situation. Each conversation is a small act of creation, contributing to the ongoing evolution of language. The ability to improvise, to make oneself understood under varying conditions, becomes the defining feature of linguistic competence.

Language, then, is not a static code but a living practice, sustained by the continuous interplay between individuals. It exists not in dictionaries or grammars but in the activities through which people coordinate their actions and understandings. From the first encounters between strangers to the most routine exchanges, communication remains a collaborative achievement, grounded in the shared human capacity to interpret, adapt, and connect.

Christiansen, M. H. and Chater, N. (2022) The Language Game: How Improvisation Created Language and Changed the World. London: Allen Lane.

Now or Never Speech: The Mind Under Pressure

Morten H. Christiansen and Nick Chater in ‘The Language Game: How Improvisation Created Language and Changed the World’ develop a striking insight into the temporal fragility of language, arguing that speech is not a stable object we process at leisure but a fleeting stream that must be grasped instantly or lost, forcing the human mind to operate under extreme constraints that shape both the structure of language and the nature of thought itself. The story of the Navajo Code Talkers during the Second World War provides a vivid illustration of this phenomenon: to those unfamiliar with Navajo, the transmissions sounded like an unintelligible cascade of sounds, yet for trained speakers, meaning emerged with remarkable speed and precision. The difference did not lie in the signal itself, but in the listener’s capacity to organise it in real time. This example reveals a fundamental property of language: it exists only in motion. Spoken words do not linger; they vanish almost as soon as they are heard. The auditory trace available to the brain lasts only fractions of a second, placing immense pressure on cognitive systems to extract structure immediately. There is no opportunity to store the raw input and analyse it later. Instead, interpretation must occur as the signal unfolds. Language, therefore, is not processed after the fact but during its very occurrence, within a narrow temporal window that imposes strict limits on memory and attention. These constraints are captured in what Christiansen and Chater describe as the ‘Now-or-Never bottleneck’. The mind must process linguistic input now, because if it waits, the information is gone forever. This bottleneck is not a minor inconvenience but a defining condition of language. It forces the brain to adopt strategies that compress, reorganise, and stabilise incoming information as quickly as possible. Without such strategies, the continuous flow of speech would overwhelm the system.

The primary mechanism that enables this rapid processing is chunking. Rather than treating each sound as an isolated unit, the brain groups elements into larger, meaningful patterns. Individual phonetic fragments are combined into syllables, syllables into words, words into phrases, and phrases into more complex constructions. This hierarchical organisation reduces the burden on memory, allowing the system to handle complexity by transforming it into manageable units. What begins as a sequence of fleeting signals becomes a structured representation that can be retained long enough to be interpreted. Chunking is not an innate, static ability but a skill developed through experience. Just as a novice listener hears only a series of disconnected sounds in an unfamiliar language, a skilled listener perceives coherent units, anticipating patterns and filling in gaps. The process resembles learning in other domains, such as music or chess, where expertise involves recognising configurations rather than analysing individual components. In language, familiarity with patterns allows for rapid comprehension, turning what would otherwise be an overwhelming stream into a series of predictable structures. The same constraints apply to language production. Speakers do not construct complete sentences in advance and then deliver them as finished products. Instead, they generate speech incrementally, assembling it piece by piece as they go. A general intention is formed, but its linguistic realisation unfolds step by step, guided by the same

chunking processes that support comprehension. This just-in-time strategy ensures that production remains within the limits of cognitive capacity, avoiding overload by distributing effort across time.

The analogy with just-in-time manufacturing is particularly revealing. In such systems, components are delivered precisely when needed, minimising storage and maximising efficiency. Language operates in a similar fashion. Words and phrases are produced as required, coordinated with the unfolding interaction. There is no surplus, no reservoir of fully formed sentences waiting to be deployed. Speech is constructed in the moment, shaped by immediate demands and constraints. Despite these limitations, conversation appears effortless. Exchanges occur with remarkable speed, often with minimal pauses between turns. This apparent ease masks a highly complex process of coordination. Participants must not only understand what is being said but also anticipate when it will end, preparing their response in advance. The rapid transitions between speakers depend on predictive mechanisms that operate continuously, aligning expectations and timing. This coordination extends beyond timing to include interpretation. Meaning is not extracted solely from the words themselves but from a combination of linguistic cues, contextual knowledge, and shared assumptions. Tone, gesture, and prior experience all contribute to the construction of meaning. Words function as prompts, guiding the listener toward an interpretation that fits the situation. The success of communication depends on this alignment, on the ability of participants to converge on a shared understanding despite the inherent ambiguity of language. Such observations challenge the traditional model of communication as a simple transfer of information. The idea that a speaker encodes a message and a listener decodes it fails to account for the immediacy and fluidity of real interactions. There is no stable message independent of context, no fixed content that passes unchanged from one mind to another. Instead, communication is a process of joint construction, where meaning emerges through the interaction of participants under conditions of temporal constraint.

The Navajo Code Talkers exemplify this adaptability. Their use of Navajo, combined with an additional layer of encoding, created a system that was both efficient and secure precisely because it relied on the rapid, context-sensitive processing of trained speakers. What was incomprehensible to outsiders became transparent within the group, demonstrating that understanding depends not on the signal alone but on the interpretive framework brought to it. This perspective also clarifies the inherently ambiguous nature of language. Expressions rarely have a single, fixed meaning. Their interpretation depends on context, and different contexts can produce radically different readings. Yet this ambiguity does not hinder communication; it is what makes flexibility possible. By relying on shared knowledge and situational cues, speakers and listeners can resolve ambiguity in ways that are appropriate to the moment. Language thus resembles a game in which participants must continually adapt to changing conditions. The rules are not fixed in advance but emerge from the interaction itself. Each exchange refines the system, reinforcing patterns that facilitate understanding while allowing for variation and innovation. The fleeting nature of speech ensures that this process remains dynamic, preventing the system from becoming rigid.

In this light, the miracle of communication lies not in the existence of a perfect system but in the ability to operate effectively within severe constraints. Human language succeeds not because it overcomes these constraints but because it is shaped by them. The necessity of immediate processing, the limits of memory, and the demands of interaction all contribute to the form language takes. What emerges is a vision of language as a process rather than a structure, as something that happens rather than something that exists. It is an ongoing activity, sustained by the continuous effort of speakers and listeners to make sense of fleeting signals. In this activity,

meaning is not transmitted but created, not stored but enacted, within the narrow window of the present moment.

Christiansen, M. H. and Chater, N. (2022) The Language Game: How Improvisation Created Language and Changed the World. London: Allen Lane.

The Weightless Web of Words: Meaning Without Essence

Morten H. Christiansen and Nick Chater in ‘The Language Game: How Improvisation Created Language and Changed the World’ confront the long-standing illusion that words carry fixed, stable meanings, replacing it with a vision of language as a fluid network of overlapping uses in which meaning is never anchored in essence but continually negotiated through context, experience, and interaction. Drawing implicitly on Ludwig Wittgenstein’s idea of ‘family resemblances’, they show that what appears to be semantic stability is in fact a fragile equilibrium sustained by shared habits of interpretation. The difficulty begins with the simplest examples. A word like ‘light’ seems trivial, yet its uses proliferate across contexts in ways that resist any single definition. A light meal, a light touch, a light aircraft, a light mood—each instance evokes a different nuance, sometimes physical, sometimes metaphorical, sometimes evaluative. Attempts to identify a common core quickly dissolve into abstraction. The search for essence, once central to philosophical inquiry, proves inadequate when confronted with the practical diversity of language. Words do not point to stable entities; they operate within shifting fields of use. This instability is not a defect but a fundamental property of language. The traditional view that words function as labels attached to objects fails to account for the range of linguistic phenomena. Even apparently concrete terms resist simple mapping. The word ‘dog’ does not correspond neatly to a single referent: it may denote a species, an individual animal, a symbolic figure, or a conceptual category with blurred boundaries. When one turns to abstract terms, the problem intensifies. Words like ‘problem’, ‘justice’, or ‘there’ cannot be anchored in direct perception at all. Their meaning depends entirely on how they are used within particular situations.

Wittgenstein’s notion of family resemblance offers a more adequate framework. Words are connected not by a single defining feature but by a network of overlapping similarities. Just as members of a family may share certain traits without all possessing the same ones, the uses of a word are linked through partial correspondences. A ‘light beer’ and ‘light infantry’ do not share an identical property, yet they evoke related notions of reduced intensity or burden. Meaning emerges from these connections, not from an underlying essence. Dictionaries, often assumed to provide authoritative definitions, reveal the same pattern upon closer inspection. Rather than offering precise meanings, they present clusters of examples, each illustrating a possible use. The multiplicity of senses listed for a single word reflects the impossibility of reducing meaning to a single formulation. Definitions rely on the reader’s ability to infer relationships between contexts, much as participants in a communicative exchange rely on shared understanding to interpret utterances. The dictionary does not resolve ambiguity; it organises it. This organisation is dynamic. Words shift their meanings over time, adapting to new circumstances and communicative needs. Metaphor plays a central role in this process, enabling existing terms to be extended into new domains. A ‘tweet’ once belonged exclusively to the domain of birds; it now designates a form of digital expression. Such transformations illustrate how language evolves not through deliberate design but through the cumulative effect of countless acts of use. Each extension leaves a trace, contributing to the evolving network of meanings.

The rejection of essential meaning leads to a broader reconceptualisation of language. Rather than a system of fixed correspondences between words and the world, language becomes a flexible set of tools shaped by practice. Meaning is not something contained within words but something achieved through their use. Communication depends on the ability of participants to align their interpretations, drawing on shared knowledge and contextual cues. This alignment is necessarily approximate. In everyday interaction, meaning is rarely precise. Speakers and listeners operate with ‘good enough’ interpretations, sufficient for the purposes of the moment. The philosophical demand for exact definitions gives way to a practical tolerance for ambiguity. Communication succeeds not because meanings are fixed but because participants can navigate uncertainty, adjusting their interpretations as needed. The process of language acquisition reflects this reality. Children do not learn words by memorising definitions but by engaging in repeated interactions in which meaning is inferred from context. Through trial and adjustment, they gradually align their usage with that of others. This process resembles a form of participatory guessing, akin to a game in which each move refines the shared understanding. Over time, patterns stabilise, but they remain open to revision.

Metaphor extends this flexibility into the conceptual domain. Abstract ideas are often expressed in terms borrowed from physical experience: arguments have ‘foundations’, ideas ‘flow’, problems are ‘grasped’ or ‘uncovered’. These expressions are not merely ornamental; they structure thought itself, providing a bridge between concrete experience and abstract reasoning. Through metaphor, language continually expands its reach, incorporating new meanings without abandoning old ones. At the same time, the arbitrariness of linguistic signs ensures that no fixed connection binds words to their meanings. Different languages employ entirely different forms to refer to the same concepts, demonstrating that meaning is not inherent in sound. This arbitrariness allows for diversity and change, freeing language from the constraints of a predetermined structure. Yet it also underscores the dependence of meaning on shared convention: without agreement, communication would collapse. The dream of a perfect language, one in which each word corresponds precisely to a single concept, emerges as a misunderstanding of the nature of communication. Such a system would lack the flexibility required to adapt to new situations. The very features often criticised as imperfections—ambiguity, variability, metaphor—are what enable language to function effectively. They allow speakers to respond to the complexities of the world, to express nuance, and to negotiate meaning in real time.

The ‘lightness’ of meaning, then, is not a weakness but a condition of possibility. Because meanings are not fixed, they can be reshaped; because they are not rigid, they can accommodate new experiences. Language operates as a living system, continuously reconfigured through use. Each act of communication contributes to this process, reinforcing certain patterns while opening space for others. In this sense, meaning exists not in words themselves but in the network of relationships that connects them, and in the practices through which they are employed. It is weightless in that it cannot be pinned down to a single point, yet it is sustained by the collective activity of speakers and listeners. Language does not capture reality in a fixed form; it provides a means of engaging with it, of navigating its ambiguities and possibilities. What emerges is a vision of language as an ever-shifting web, held together not by essence but by use. Words do not carry meaning; they invite it. And in accepting that invitation, speakers and listeners participate in the continuous creation of the very system that makes communication possible.

Christiansen, M. H. and Chater, N. (2022) The Language Game: How Improvisation Created Language and Changed the World. London: Allen Lane.

Order Without Design: Language at the Edge

Morten H. Christiansen and Nick Chater in ‘The Language Game: How Improvisation Created Language and Changed the World’ challenge the enduring anxiety that language is in decline by reframing linguistic change not as decay but as the inevitable outcome of a self-organising system, one that exists in a delicate balance between stability and transformation, where order is continuously rebuilt from the ground up through use rather than imposed from above through rules or design. The recurring fear that language is deteriorating—whether expressed in complaints about redundancy, texting, or grammatical looseness—reveals less about language itself and more about a persistent misunderstanding of its nature. Across centuries, observers have lamented the supposed corruption of language. From early modern critics to contemporary commentators, the narrative remains the same: language is losing its purity, its precision, its discipline. Yet this narrative collapses when confronted with historical reality. Every stage of a language’s development has been perceived by its contemporaries as a decline from a more perfect past. What is now considered standard was once regarded as deviation. The perception of decay is thus not evidence of linguistic collapse but a constant feature of human reflection on change. What appears as disorder is, in fact, transformation. Languages do not degrade; they evolve. The transition from earlier forms to modern ones is not a process of loss but of reconfiguration. Structures shift, meanings expand or contract, and patterns stabilise or dissolve. Yet throughout these changes, language continues to fulfil its fundamental function: enabling communication. The capacity to convey meaning is not diminished by change but sustained through it.

This persistence is possible because language is not centrally controlled. Unlike engineered systems, it has no designer, no authority imposing structure from above. Instead, it emerges from countless local interactions, each instance of communication contributing to the gradual formation of patterns. This process exemplifies what can be described as spontaneous order, where complex organisation arises from simple, repeated acts. Just as markets, ecosystems, or social norms develop without central coordination, language evolves through the cumulative effect of individual behaviour. The study of complex systems provides a useful analogy. In such systems, global patterns emerge from local interactions without any overarching plan. The intricate structure of a termite mound, the organisation of a flock, or the formation of geological patterns all result from simple rules operating at a small scale. Language operates in a similar manner. Each conversational exchange is a micro-event, yet over time, these events produce large-scale regularities—grammatical structures, word orders, and semantic conventions. This perspective stands in contrast to theories that posit an innate, pre-specified blueprint for language. The idea of a universal grammar suggests that linguistic structure is encoded in the human mind, constraining the forms that language can take. However, the diversity of languages challenges this view. Differences in word order, morphology, and syntax are not superficial variations on a single theme but reflect distinct historical trajectories. Rather than being derived from a fixed template, linguistic patterns emerge through adaptation to communicative needs and cognitive constraints.

Word order provides a clear example of this emergent process. Languages vary widely in how they organise subjects, verbs, and objects, and these patterns are not static. Over time, systems that were once flexible can become more rigid, as repeated usage stabilises certain sequences. This shift does not reflect a move toward an ideal form but the gradual conventionalisation of practices that facilitate efficient communication. What begins as variation becomes pattern; what is frequent becomes normative. The concept of construction grammar further reinforces this view. Instead of seeking universal rules, this approach focuses on the building blocks of language—form–meaning pairings that range from small morphological markers to larger idiomatic expressions. Language is thus conceived as a network of constructions, each shaped by usage and interconnected with

others. These constructions are not governed by a single overarching system but form a patchwork, marked by irregularities and exceptions. Such irregularities are not flaws but traces of the historical processes that produced them. Children's language acquisition illustrates how these patterns are learned. Rather than internalising abstract rules, learners begin with concrete expressions, gradually extending and modifying them. The process is one of accumulation and adjustment, where patterns are inferred from repeated exposure. Over time, these patterns become entrenched, giving rise to the appearance of systematic grammar. Yet this system remains grounded in usage, continually reshaped by new interactions.

Language thus occupies a precarious position at the boundary between order and disorder. Too much rigidity would render it inflexible, unable to adapt to new circumstances. Too much variability would undermine mutual understanding. Its effectiveness depends on maintaining a balance, where stable patterns coexist with the capacity for innovation. This balance is not achieved through design but through continuous negotiation among speakers. The notion of language at the 'edge of chaos' captures this condition. In complex systems theory, this phrase describes a state in which a system exhibits both stability and adaptability, capable of generating new structures without collapsing into randomness. Language exemplifies this state. Its conventions provide enough structure to support communication, while its openness allows for creativity and change. It is precisely this tension that sustains its vitality. The fear of linguistic decay arises when change is interpreted as loss rather than transformation. New forms are judged against established norms, and deviations are seen as errors. Yet these deviations are the very mechanisms through which language evolves. What is condemned in one generation may become standard in the next. The history of language is a record of such shifts, each one reflecting the adaptive capacity of the system.

In this light, language appears not as a fragile structure in need of preservation but as a resilient process capable of renewing itself. Its order is not imposed but emergent, arising from the interplay of countless acts of communication. Each speaker contributes to this process, reinforcing certain patterns while introducing variation. Over time, these contributions accumulate, shaping the trajectory of the language. The result is a system of remarkable complexity, one that cannot be reduced to simple rules or explained by a single principle. It is a living system, constantly in flux, yet capable of sustaining coherence across generations. Its stability lies not in permanence but in its capacity to adapt, to reorganise itself in response to changing conditions. Language, then, is best understood not as a structure but as a process—an ongoing negotiation between order and chaos, between convention and innovation. It is this dynamic equilibrium that allows it to endure, not despite change but because of it. In every utterance, the system is both reproduced and transformed, maintaining its coherence while remaining open to the future.

Christiansen, M. H. and Chater, N. (2022) The Language Game: How Improvisation Created Language and Changed the World. London: Allen Lane.

Culture Before Code: Language Without Genes

Morten H. Christiansen and Nick Chater in 'The Language Game: How Improvisation Created Language and Changed the World' advance a decisive break with biologically deterministic accounts of language by arguing that linguistic complexity is not the product of specialised genetic evolution but the result of rapid cultural adaptation, where language itself evolves to fit the human brain rather than the brain evolving specifically for language. This reversal of perspective dissolves the long-standing assumption that language must be rooted in a unique biological innovation and

instead situates it within the broader dynamics of cultural transmission. The intellectual origins of this idea reach back to the nineteenth century, when Charles Darwin, reflecting on the development of his theory of natural selection, found in language a compelling analogue for biological evolution. Influenced by the philological work of Hensleigh Wedgwood and others, Darwin observed that languages, like species, exhibit patterns of divergence and descent. Different languages could be traced back to common ancestors, forming genealogical trees that mirrored the branching structure of life itself. This parallel suggested that complex systems could emerge through processes of variation and selection without the need for central design. However, the crucial distinction lies in the timescale and mechanism of change. Biological evolution unfolds slowly, across millennia, shaped by genetic variation and environmental pressures. Language, by contrast, evolves with extraordinary speed, driven by the cumulative effects of individual interactions. Words, constructions, and sounds compete for use, and those that prove effective are retained and propagated. This process resembles natural selection, but it operates in the domain of culture rather than biology.

The implication is profound: the evolution of language does not require a dedicated biological adaptation. The apparent uniqueness of human language does not necessitate a biological ‘Rubicon’ separating humans from other species. Instead, language emerges from the flexible application of general cognitive abilities—memory, pattern recognition, social inference—that were already present in our ancestors. The question shifts from how the brain evolved for language to how language adapted to the constraints and capacities of the brain. These constraints shape linguistic systems in multiple ways. Cognitive limitations, such as the need to manage attention and inference, favour structures that clarify relationships between known and new information. Perceptual and motor capacities restrict the range of possible sounds and gestures, guiding the formation of phonological systems. Memory constraints encourage the emergence of patterns that are easier to learn and recall, leading to the gradual elimination of excessively complex or irregular forms. Through repeated use, these constraints exert selective pressure, ensuring that languages remain usable and learnable. Conventionalisation plays a central role in this process. What begins as an improvised communicative act becomes, through repetition, a shared convention. Like gestures in a game of charades that acquire stable meanings over time, linguistic forms solidify into patterns that can be recognised and reused. Yet these patterns remain open to modification, continually reshaped by new contexts and uses. Language is thus both stable and fluid, maintaining coherence while adapting to change.

This dynamic can be understood as a form of symbiosis. Language depends on human cognition and social interaction for its existence, while humans rely on language for communication and cultural development. However, the relationship is asymmetrical in terms of adaptation. Because language changes far more rapidly than genes, it is language that adjusts to the brain, not the other way around. Computational models support this view, showing that linguistic systems evolve to become increasingly aligned with the learning biases and processing constraints of their users. The search for a specific ‘language gene’ illustrates the limitations of a biologically centred approach. The discovery of the FOXP2 gene initially seemed to offer a genetic foundation for language, as mutations in this gene were associated with speech and language impairments. Yet further research revealed that FOXP2 is not unique to humans and does not encode language-specific abilities. Instead, it plays a broader role in neural processes such as sequence learning and motor control. Language, rather than arising from this gene, makes use of such general capacities, integrating them into a more complex system. This perspective aligns with the broader idea that language is constructed from pre-existing components. Neural regions associated with language are not genetically predetermined for that purpose but become specialised through use. Just as literacy

recruits visual processing systems originally evolved for object recognition, language builds on cognitive mechanisms that evolved for other functions. The brain is not a machine designed for language; language is a system that has adapted to the machine.

The ease with which children acquire language further supports this view. If language were an arbitrary system imposed on the mind, learning it would be a formidable challenge. Instead, children master their native language rapidly and with little explicit instruction. This apparent ease is not evidence of an innate grammatical blueprint but of the compatibility between language and the human cognitive system. Languages have been shaped over generations to fit the learning capacities of children, making them inherently accessible. Learning a language, therefore, is not the acquisition of a fixed set of rules but the re-enactment of a cultural process. Each generation inherits a system that has already been optimised for learnability and use. Through interaction, learners internalise patterns that have been refined over time, contributing in turn to their further evolution. The process is recursive: language shapes its users, and users reshape language. This understanding reframes the nature of linguistic complexity. What appears as an intricate system of rules is better understood as the outcome of countless adaptations to cognitive, perceptual, and social constraints. Complexity arises not from design but from accumulation, not from genetic encoding but from cultural evolution. Language is a historical artefact, a record of the interactions that have shaped it. The broader implication is that language is not a biological given but a cultural achievement. Its existence depends on continuous use, transmission, and adaptation. Without these processes, it would not persist. Language is therefore both fragile and resilient: fragile in its dependence on social interaction, resilient in its capacity to adapt to changing conditions.

In this light, the relationship between language and humanity becomes clearer. Language is not an isolated faculty but a system embedded in the broader dynamics of human life. It reflects the interplay between cognitive capacities and social needs, evolving to mediate between them. Its origins lie not in a single evolutionary leap but in the gradual alignment of cultural practices with biological constraints. Language, then, is not a product of biological evolution in the narrow sense but a phenomenon that emerges at the intersection of biology and culture. It is a system that evolves without genes, a structure that adapts without design, and a practice that persists because it continually reshapes itself to fit the minds that use it. In this ongoing process, language reveals itself as one of the most striking examples of how complex order can arise from simple, repeated acts of human interaction.

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The Loop of Minds: Language as Reciprocal Evolution

Morten H. Christiansen and Nick Chater in ‘The Language Game: How Improvisation Created Language and Changed the World’ reframe the emergence of language not as a sudden biological innovation but as the outcome of a recursive interaction between brain, culture, and communication, a dynamic process in which each element continually reshapes the others, producing what can be described as a virtuous circle of cognitive and cultural amplification. This perspective displaces the search for a singular origin and instead situates language within a long trajectory of mutual adaptation, where neither brain nor language can be understood in isolation. The temptation to locate intelligence in the physical structure of the brain has long guided scientific curiosity, yet empirical evidence resists such simplification. Collections of preserved brains, from eminent scholars to notorious criminals, reveal no clear anatomical markers that account for

intellectual or moral difference. Even across species, the relationship between brain size and cognitive capacity proves unreliable. Creatures with vastly fewer neurons can display sophisticated communicative behaviours, while larger brains do not guarantee greater symbolic ability. Intelligence, therefore, cannot be reduced to quantity; it emerges from patterns of organisation, from the ways in which neural systems are structured and engaged. The enlargement of the human brain, beginning roughly two to three million years ago, introduces a crucial turning point in this narrative. Such growth came at a considerable metabolic cost, suggesting that it must have conferred significant adaptive advantages. Various explanations have been proposed, from dietary changes to increasing social complexity, yet the role of communication offers a particularly compelling account. Even rudimentary systems of signalling would have enabled more effective cooperation, allowing individuals to share knowledge, coordinate actions, and transmit skills. These advantages would favour those with greater cognitive flexibility, reinforcing the selection for larger and more capable brains.

What emerges is not a linear cause but a feedback loop. As communicative practices become more sophisticated, they place greater demands on cognitive capacities. In turn, enhanced cognitive abilities enable more complex forms of communication. This reciprocal process generates a virtuous circle, in which incremental advances in language and intelligence amplify each other over time. Language does not arise fully formed; it grows alongside the capacities that sustain it, each shaping the trajectory of the other. The origins of this process can be traced to simple acts of shared attention and representation, akin to a form of communicative charades. Early humans likely relied on gestures, vocalisations, and contextual cues to convey meaning, constructing shared understandings through improvisation. These interactions, initially fragile and context-dependent, gradually became stabilised through repetition. Patterns that proved effective were retained, conventionalised, and transmitted, forming the basis of increasingly structured systems of communication. This account challenges the notion that language depends on a specialised genetic endowment, such as a universal grammar encoded in the human genome. Instead, the human brain is understood as a general-purpose organ, capable of supporting a wide range of functions, including language. What distinguishes humans is not the presence of a unique linguistic module but a heightened capacity for social cognition, for interpreting intentions, sharing attention, and constructing meaning collaboratively. Language emerges from this capacity rather than from a pre-specified biological blueprint.

The contrast with other primates underscores this point. Great apes, despite their cognitive sophistication, do not spontaneously engage in the kind of cooperative communication that characterises human interaction. Their gestures tend to be instrumental, directed toward immediate goals, rather than oriented toward shared understanding. They do not naturally point to share attention or create symbolic systems to represent absent objects or events. Even when trained, their communicative abilities remain limited, lacking the generative and collaborative dimensions that define human language. This difference reveals the importance of a specific kind of social motivation: the drive to share experiences and coordinate actions through symbolic means. It is this motivation that sustains the virtuous circle of language and cognition, enabling the accumulation of cultural knowledge across generations. Language transforms individual learning into collective inheritance, allowing each generation to build upon the achievements of the previous one. Knowledge is no longer confined to immediate experience but can be transmitted, refined, and expanded through communication. The consequences of this transformation are profound. Language enables the emergence of complex social structures, from systems of trade to institutions of governance. It facilitates the development of specialised knowledge, from tool-making to abstract reasoning. It allows for the articulation of norms, beliefs, and values, creating

the cultural frameworks within which human life unfolds. In this sense, language is not merely a tool for communication but the foundation of human society.

The identification of language as a major evolutionary transition reflects this significance. It introduces a new mode of evolution, distinct from biological processes, in which information is transmitted not through genes but through symbols. Cultural evolution operates at a vastly accelerated pace, allowing for rapid adaptation and innovation. Linguistic forms, like cultural practices, are subject to continuous variation and selection, evolving in response to the needs and constraints of their users. At the same time, language reshapes cognition itself. By providing a system of symbolic representation, it enables new forms of thought, from abstract reasoning to hypothetical imagination. Concepts that would be difficult to grasp without linguistic expression become accessible, facilitating the expansion of intellectual horizons. Language does not determine thought, but it guides and structures it, shaping the ways in which humans perceive and engage with the world. This interplay between language and thought extends to the diversity of human cultures. Different linguistic systems encode different distinctions, emphasising particular aspects of experience. These variations do not limit cognition but channel it, making certain patterns of reasoning more salient. Through this process, language contributes to the formation of distinct worldviews, each reflecting the historical and cultural context in which it developed. The cumulative effect of this virtuous circle is the transformation of the human species into a dominant force on the planet. Through language, humans coordinate large-scale activities, develop technologies, and reshape their environments. The Anthropocene stands as a testament to the power of this process, marking an era in which human activity, mediated by communication, exerts a decisive influence on the Earth.

Yet this power also reveals the ambivalence of language. The same mechanisms that enable cooperation and innovation can also facilitate conflict, manipulation, and misunderstanding. Language amplifies human capacities in all directions, intensifying both creative and destructive potentials. It is not a neutral instrument but a dynamic system embedded in the complexities of human life. The virtuous circle of brain, culture, and language thus represents both the source of human achievement and the condition of human vulnerability. It is a process without final equilibrium, continually generating new forms of order and disorder. Language evolves as long as it is used, shaped by the interactions that sustain it and the minds that interpret it. In this ongoing movement, language reveals itself not as a static system but as a living process, one that exists only in the interplay between individuals and communities, between cognition and culture. It is through this process that humans have become what they are, and it is through this process that they will continue to change, guided not by predetermined design but by the recursive dynamics of their own communicative practices.

Christiansen, M. H. and Chater, N. (2022) The Language Game: How Improvisation Created Language and Changed the World. London: Allen Lane.

The Bioprogram Hypothesis: Language as Species Memory

Derek Bickerton in *Roots of Language* redefines the study of language by shifting attention away from the narrow description of individual linguistic systems toward a unified explanatory framework that connects creole formation, child language acquisition, and the evolutionary origins of language, proposing that these domains are not separate problems but different manifestations of a single underlying process rooted in human biology. Linguistics, despite its long intellectual history stretching back to Panini, has remained largely conservative in its orientation. Its primary

focus has been the meticulous description of existing languages, often at the expense of more fundamental questions concerning how language arises in the first place. While modern linguistics has expanded its scope, it has frequently done so by refining analytical tools rather than addressing the deeper issues of acquisition and evolution. The result is a field rich in detail but fragmented in its theoretical foundations. Bickerton identifies three central questions that must be addressed together if any meaningful progress is to be made. The first concerns the origin of creole languages, which emerge in contexts where speakers of different linguistic backgrounds are forced to communicate using simplified systems known as pidgins. The second involves the process by which children acquire language, a task they accomplish with remarkable speed and consistency despite limited and imperfect input. The third addresses the evolutionary origins of language itself, a question that has long resisted satisfactory explanation. Traditionally, these problems have been treated in isolation, with little attempt to integrate their insights. Bickerton argues that this separation is artificial and that any adequate theory must account for all three simultaneously.

The starting point for this integration is the study of creole languages. At first glance, creoles might appear to be peripheral phenomena, arising only under specific historical conditions. Yet their significance lies precisely in their capacity to reveal the mechanisms by which language can be constructed from minimal input. In the case of Hawaiian Creole English, for example, the language that emerged cannot be fully explained as a direct continuation of the pidgin that preceded it. Instead, it displays features that appear to have been created anew, suggesting that speakers—particularly children—actively imposed structure on the available linguistic material. This pattern is not confined to a single case. Across diverse geographical and historical contexts, creole languages exhibit striking similarities, particularly in their syntactic and semantic organisation. These commonalities cannot be attributed solely to shared input, as the source languages often differ significantly. Instead, they point to a process of independent invention, in which speakers draw on underlying cognitive resources to generate structured linguistic systems. Creoles thus provide a window into the mechanisms that shape language at its most fundamental level. The connection to child language acquisition becomes evident when considering how children learn to speak. Despite variations in input, children across cultures follow similar developmental trajectories, producing forms that deviate systematically from adult speech. These so-called errors are not random but reflect consistent patterns, suggesting the operation of an internal framework that guides language learning. Children do not simply imitate what they hear; they reconstruct language according to principles that appear to be innate.

Bickerton describes this internal framework as a bioprogram, a species-specific capacity that enables humans to generate language even under conditions of limited input. In the context of creole formation, this bioprogram becomes particularly visible. When exposed to a pidgin lacking stable grammar, children transform it into a fully developed language, introducing structure where none previously existed. This process mirrors the developmental patterns observed in individual language acquisition, reinforcing the idea that both phenomena are expressions of the same underlying mechanism. The implications of this hypothesis extend to the question of language evolution. If humans possess an innate capacity for language, then this capacity must itself have evolved. Yet this raises a paradox. Language appears to be uniquely human, with no clear analogues in other species, yet it must have arisen through gradual evolutionary processes. Bickerton addresses this continuity paradox by proposing that the bioprogram reflects a specific stage in evolutionary development, one that builds on pre-existing cognitive capacities while introducing qualitatively new features. This evolutionary perspective requires a reconsideration of the relationship between biology and culture. Language is not simply a cultural artefact, nor is it reducible to genetic programming. Instead, it emerges from the interaction between biological

constraints and cultural processes. The bioprogram provides a framework within which languages can develop, but the specific forms they take are shaped by social interaction and historical context. This duality explains both the universality of certain linguistic features and the diversity of languages across the world.

The study of creoles, child language acquisition, and evolutionary processes thus converges on a single insight: language is neither entirely learned nor entirely innate, but the product of a dynamic interplay between internal capacities and external influences. By examining cases where input is limited or disrupted, such as in creole formation, it becomes possible to isolate the contributions of the bioprogram and gain a clearer understanding of the mechanisms involved. Bickerton's approach challenges the compartmentalisation that has characterised much of linguistic research. By insisting on the interdependence of different domains, it opens the possibility of a more comprehensive theory that can account for both the structure and the origins of language. This theory does not eliminate the need for detailed linguistic analysis but situates it within a broader framework that connects individual languages to the capacities of the human species. At a deeper level, the implications of this work extend beyond linguistics. Language is not merely a system of communication but a defining feature of human cognition and social organisation. Understanding its origins sheds light on the nature of the human mind and the processes through which culture is transmitted and transformed. It also raises questions about the limits of human knowledge, as the very tool used to investigate these questions—language itself—is both the object and the medium of inquiry.

The concept of a bioprogram suggests that language is, in a sense, a form of species memory, encoding patterns of thought and communication that have been shaped over evolutionary time. This memory is not fixed but flexible, allowing for the continual creation of new linguistic forms. Each generation inherits the capacity for language and, through use, reshapes it, contributing to an ongoing process of evolution that operates at both biological and cultural levels. In bringing together the study of creoles, acquisition, and evolution, Bickerton provides a framework for understanding language as a unified phenomenon. Rather than treating its various aspects as separate problems, he reveals their underlying connections, offering a perspective in which language emerges as a coherent system grounded in the nature of the human species. The roots of language, in this view, lie not in isolated events or singular innovations but in the complex interplay of forces that shape both mind and society.

Bickerton, D. (1990) Roots of Language. Ann Arbor: Karoma Publishers.

Before Words Sang: Music as the First Language

W. Tecumseh Fitch in 'Musical Protolanguage: Darwin's Theory of Language Evolution Revisited' from *Birdsong, Speech, and Language: Exploring the Evolution of Mind and Brain* edited by Johan J. Bolhuis and Martin Everaert returns to Charles Darwin's original insight that language did not begin as a system of meaning but as a system of sound, proposing that the roots of human speech lie in a pre-linguistic, musical stage shaped by biological predispositions, vocal learning, and social selection. Darwin's hesitation to confront human evolution directly in his early work was not due to uncertainty but to strategy. He understood that extending evolutionary theory to the human mind, and particularly to language, would provoke resistance from both scientific and religious communities. Yet language quickly became the central battleground. Critics such as Alfred Wallace argued that the human mind exceeded the explanatory power of natural selection,

while Max Müller insisted that language marked an absolute boundary between humans and animals. This claim positioned language as a discontinuity, a point beyond which evolutionary explanation could not proceed. Darwin's response was neither defensive nor reductive. Instead of denying the uniqueness of language, he sought to explain it within the broader framework of evolutionary theory. His proposal of a musical protolanguage represents one of the earliest attempts to reconcile the apparent discontinuity between human language and animal communication with the principle of gradual evolution. Rather than assuming that language emerged fully formed, Darwin suggested that it evolved from a precursor system that shared features with other forms of animal vocalisation, particularly birdsong. The comparison with birds is not accidental. Among nonhuman species, birds exhibit one of the closest analogues to human vocal behaviour. They learn their songs through imitation, develop regional dialects, and rely on cultural transmission across generations. These characteristics parallel key aspects of human language acquisition, including the babbling stage in infants, which resembles the subsong of young birds. Darwin recognised that such similarities pointed to a shared underlying capacity: the ability to learn and modify vocalisations based on experience.

Central to this capacity is what Darwin described as an instinct to learn. Language, in this view, is not a fixed system encoded in the brain but a biological predisposition that enables the acquisition of linguistic structures. This distinction between the capacity for language and the specific languages that individuals learn anticipates later theoretical developments, emphasising that language is both innate and acquired. The instinct does not determine the form of language but provides the conditions under which it can emerge. The musical protolanguage hypothesis builds on this foundation by proposing that early human vocalisations were primarily expressive rather than referential. These sounds did not initially convey specific meanings but served functions related to emotion, social bonding, and display. In this stage, vocalisation resembles music more than speech, characterised by rhythm, melody, and variation rather than discrete symbolic units. Such vocal behaviour would have been shaped by sexual selection, functioning as a signal of fitness, creativity, and emotional sensitivity. This aesthetic dimension of early vocalisation suggests that language did not originate as a tool for transmitting information but as a medium of social interaction. The use of sound to attract mates, establish bonds, or assert presence precedes its use to describe the world. Meaning, in this account, is a later development, emerging as vocal patterns become associated with specific contexts and gradually acquire referential functions. The transition from musical expression to semantic communication represents a critical threshold. Darwin proposed that early humans began to imitate natural sounds, animal calls, and instinctive cries, attaching meanings to vocalisations through repeated association. This process transformed non-propositional sound into symbolic language, enabling the communication of specific ideas. The emergence of meaning thus depends not on a sudden innovation but on the gradual accumulation of associations between sound and context.

Yet this account leaves unresolved the problem of structure. While it explains how words might acquire meaning, it does not fully address how they combine into complex expressions. Modern developments have extended Darwin's framework by introducing the concept of holistic protolanguage, in which early utterances functioned as undivided units of meaning rather than combinations of discrete elements. Over time, these holistic expressions could be analysed into smaller components, giving rise to the compositional structure characteristic of modern language.

The role of selection in this process remains a matter of debate. Darwin's emphasis on sexual selection highlights the importance of display and attraction, but it does not fully account for the universal and early emergence of language across individuals and cultures. Alternative explanations point to kin selection and the role of communication in maintaining social bonds, particularly between caregivers and infants. These perspectives suggest that language evolved not only as a signal of individual fitness but as a mechanism for sustaining cooperative relationships. Refinements of the musical protolanguage hypothesis have also clarified the distinction between music and speech. While Darwin's model emphasises the musical qualities of early vocalisation, contemporary research suggests that prosody—patterns of rhythm and intonation in speech—provides a more precise analogue. Prosodic features convey emotional and structural information without relying on discrete pitches, bridging the gap between continuous sound and symbolic language. This adjustment preserves the core insight of Darwin's model while aligning it with current understanding of vocal communication. The enduring significance of the musical protolanguage hypothesis lies in its integration of biological and cultural perspectives. Language emerges from the interaction between innate capacities and social practices, shaped by evolutionary pressures and cultural transmission. The comparison with birdsong illustrates that key components of language, such as vocal learning and cultural variation, are not uniquely human but are recombined in novel ways in the human species.

Darwin's approach also exemplifies a methodological principle that remains central to contemporary research: the use of comparative evidence to illuminate the evolution of complex traits. By examining similarities and differences across species, it becomes possible to identify the building blocks of language and trace their transformation over time. This comparative perspective resists the temptation to treat human language as an inexplicable anomaly, instead situating it within the broader continuum of biological evolution. At a deeper level, the idea that language began as music challenges assumptions about the nature of communication. It suggests that meaning is not the original function of language but a later development layered onto a system of expressive sound. This inversion has significant implications. It implies that the emotional and aesthetic dimensions of language are not secondary but foundational, shaping the ways in which humans experience and use speech. The evolution of language, in this view, is not a linear progression from simplicity to complexity but a transformation of function. What begins as a system of vocal display becomes a system of symbolic representation, without losing its original expressive qualities. Modern language retains traces of its musical origins in intonation, rhythm, and the emotional resonance of speech. Darwin's hypothesis, as revisited by Fitch, thus provides a framework for understanding language as a hybrid system, combining elements of biology, culture, and aesthetics. It does not offer a complete explanation of syntax or semantics, but it establishes a foundation upon which these features can be understood as later developments. By locating the origins of language in the domain of sound and expression, it opens a pathway for integrating insights from linguistics, biology, and the study of music.

Language, from this perspective, is not simply a tool for conveying information but a transformed echo of an earlier mode of communication, one in which sound preceded meaning and expression preceded reference. The human voice carries within it the remnants of this history, a trace of the moment when speech was still song and meaning had yet to be born.

Fitch, W. T. (2013) 'Musical Protolanguage: Darwin's Theory of Language Evolution Revisited', in Bolhuis, J. J. and Everaert, M. (eds.) Birdsong, Speech, and Language: Exploring the Evolution of Mind and Brain. Cambridge, MA: MIT Press.

Conclusion: From Signal to Noise: The Paradox of Language Genesis

Language did not begin as abundance. It began as necessity. At its origin, communication was sparse, costly, and bound to the immediacy of survival. A gesture, a cry, a sound—each signal mattered because it was rare, because it pointed to something urgent, because it could be verified in the shared space of perception. There was no excess, no redundancy, no overflow of meaning. Communication was anchored in relevance, and relevance was anchored in life itself. To speak, in this early condition, was not to perform but to act. What this book has traced is the long arc from that condition of scarcity to our present condition of excess. The genesis of language is not simply the story of how speech emerged, but how it expanded, multiplied, and ultimately exceeded the very constraints that once gave it function. Language developed because it solved problems—biological, social, cognitive—but in solving them, it generated new pressures that drove further expansion. What began as a tool of coordination became a system of representation; what began as relevance became proliferation.

The fundamental question is not only how language originated, but why it did not stop.

At the earliest stages, communication was tightly coupled with verification. Signals were reliable because they were constrained. A threat display, a call of alarm, a gesture toward food—these were meaningful because they could be checked immediately against the environment. The cost of deception was high, and the system evolved mechanisms to minimize it. In such a system, communication remained efficient precisely because it remained limited. The emergence of protolanguage marks the first break in this equilibrium. With the ability to refer to absent events, to describe past or future situations, communication gains flexibility but loses immediacy. Meaning is no longer guaranteed by perception; it must be reconstructed by the listener. This introduces a new dynamic: the possibility of exaggeration, error, and deception. To compensate, new mechanisms arise—comparison with past experience, deferred verification, and the detection of inconsistency. Language becomes not only a system of signaling but a system of evaluation. It is here that the seeds of expansion are planted. Once communication is no longer bound to the present, it becomes open-ended. There is always more that can be said, more that can be imagined, more that can be constructed. The development of syntax intensifies this process. Words are no longer isolated signals but elements in a combinatorial system capable of generating infinite expressions. Thematic segmentation allows speakers to divide reality into components, to establish relations, to construct arguments. Language becomes a machine for producing distinctions.

This expansion is not accidental; it is driven by the demands of social life. Human beings are not solitary signalers but members of complex coalitions. They must navigate alliances, hierarchies, and conflicts. In this environment, the ability to produce relevant information becomes a source of status. To speak effectively is to demonstrate value—to show that one can observe, interpret, and predict. Language becomes a form of social currency, and like all currencies, it is subject to

inflation. The more individuals compete to demonstrate relevance, the more they must speak. The more they speak, the more difficult it becomes to distinguish what matters. The threshold of relevance rises. What once would have been sufficient is no longer enough. Speakers must produce more elaborate, more novel, more striking expressions to capture attention. Language expands not because it must, but because it is rewarded.

This is the second stage in the transformation of language: from necessity to performance.

At this point, communication is no longer driven solely by the need to coordinate action or share information. It is driven by the need to be recognized, to be heard, to be valued within a group. Conversation becomes a continuous evaluation process, a subtle competition in which individuals display their cognitive and social abilities. Even the most trivial exchanges serve a function: they maintain presence, signal participation, reinforce bonds. Language becomes omnipresent, filling the spaces between actions. Yet this omnipresence carries a cost. As language becomes more frequent, it becomes less distinctive. Signals that were once rare and meaningful are repeated, imitated, and diluted. Expressions lose their force through overuse. Words that once pointed to specific experiences begin to drift, accumulating multiple meanings or none at all. The system compensates by generating new expressions, but these too are subject to the same process. Expansion leads to erosion.

This is the paradox at the heart of language genesis: the very mechanisms that make language powerful also make it unstable.

Grammaticalization provides a clear illustration of this dynamic. Linguistic forms are compressed over time to increase efficiency. Phrases become shorter, sounds erode, constructions become more automatic. But this efficiency introduces ambiguity. As forms become less distinct, they require additional context or new markers to clarify meaning. The system oscillates between compression and expansion, never reaching a final equilibrium. Each solution generates a new problem. At the cognitive level, the constraints remain constant. The human brain can process only limited amounts of information at any given moment. The flow of speech must be chunked, organized, and interpreted in real time. As language expands, these constraints become more pressing. Speakers rely increasingly on familiar patterns, predictable structures, and shared conventions. Communication becomes easier to produce but harder to evaluate. The volume of language grows, but its informational density decreases.

This leads to the third stage: abundance.

In this stage, language is no longer scarce or even merely frequent; it is excessive. It saturates the environment. Words are produced faster than they can be processed, circulated more widely than they can be verified, and interpreted within increasingly fragmented contexts. The distinction between signal and noise begins to blur. Communication persists, but its effectiveness declines. This condition is not a failure of language but the outcome of its success. Language has become so efficient, so flexible, so pervasive that it no longer requires the constraints that once ensured its reliability. It has detached from the conditions of its origin. It no longer needs to be costly, or rare, or immediately verifiable. It operates on its own terms, driven by internal dynamics rather than

external necessity. At this point, the concept of planned obsolescence becomes visible in its full sense. Language is not designed to fail, but it evolves in a way that continually renders its own forms obsolete. Words lose meaning through repetition. Structures lose clarity through compression. Systems lose coherence through expansion. The production of language generates the conditions for its own replacement. This does not mean that language disappears. On the contrary, it continues to grow. But its growth is no longer aligned with its original function. It becomes a system that produces more communication than can be meaningfully absorbed. It becomes abundant.

And abundance, in this context, leads to obsolescence.

To say that language becomes obsolete is not to say that it ceases to exist, but that its capacity to perform its original function—to reliably coordinate action, to convey relevant information, to anchor shared reality—is diminished. It continues to operate, but in a transformed state. It becomes less a tool of communication and more an environment in which communication takes place. This transformation is visible in the increasing distance between words and the systems they describe. Language simplifies, segments, and categorizes, while reality becomes more complex, interconnected, and dynamic. The gap between representation and experience widens. Words remain precise in form but imprecise in reference. They create the illusion of clarity while masking underlying complexity. At the same time, language becomes more reflexive. It refers increasingly to itself. Discourses generate other discourses. Interpretations multiply. Meaning is constructed not only in relation to the world but in relation to other meanings. The system becomes self-referential, producing layers of representation that are difficult to anchor. This reflexivity is not new, but in conditions of abundance, it accelerates. The system feeds on itself. Communication becomes less about the external world and more about navigating the internal structures of language. The distinction between speaking about something and speaking about speech itself becomes increasingly blurred.

What remains, then, at the end of this trajectory?

Not silence, but a new condition of communication. A condition in which language is recognized not as a transparent medium but as a complex, adaptive, and limited system. A condition in which meaning is no longer assumed to be contained in words but must be actively constructed. A condition in which relevance is no longer given but must be selected. In this condition, the challenge is not to produce more language but to restore its connection to relevance. This does not require a return to an original state—such a return is neither possible nor desirable—but a reorientation. A recognition that language operates under constraints, that its power depends on its limits, and that its effectiveness depends on its selective use. The genesis of language, then, is not only a beginning but a pattern. It reveals how communication systems emerge, expand, and transform. It shows that the movement from scarcity to abundance is not unique to language but characteristic of complex systems. And it suggests that obsolescence is not an endpoint but a phase in this process—a moment in which the system must adapt to its own excess. Language remains a human invention, shaped by human needs and capacities. It enabled cooperation, culture, and cognition. It allowed humans to construct worlds of meaning and to inhabit them collectively. But

it also introduced new forms of instability, new possibilities for misalignment, new challenges of interpretation.

To understand language is to understand this double movement: from signal to noise, from necessity to excess, from genesis to obsolescence.

And perhaps the final insight is this: language did not become abundant by accident. It became abundant because abundance was rewarded. Because speaking more, saying more, producing more signals increased status, attention, and influence. The system evolved not toward efficiency but toward proliferation.

In that sense, the obsolescence of language is not a failure of evolution, but its consequence.

The task that remains is not to escape language, but to see it clearly—to recognize the conditions under which it emerged, the forces that drove its expansion, and the dynamics that now shape its future. Only then can we begin to use it not as a system that overwhelms us, but as one we can navigate with awareness. Beyond the origin of language lies its transformation. And within that transformation lies the question that defines our present condition: not how language began, but how it continues—and at what cost.

*“Language was not born to express truth, but to win time against silence.
In its infancy, every word was necessary; in its maturity, every word
became possible; in its decline, every word becomes disposable. When
speech can say everything, it no longer needs to mean anything.”*
— George Steiner, *Real Presences*

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